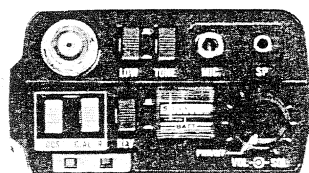


KENWOOD

SERVICE MANUAL

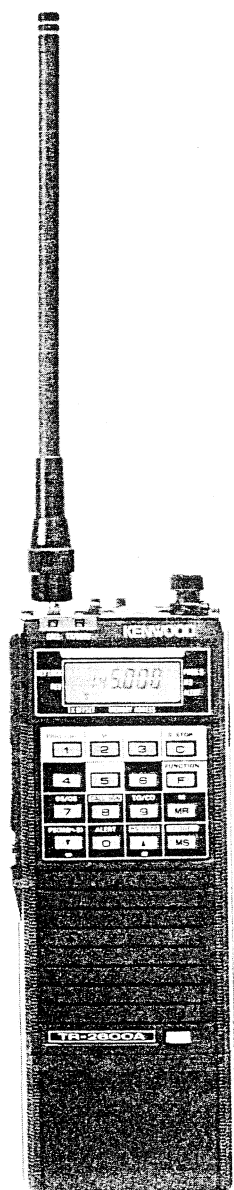
TR-2600A/E

**BC-2,BT-3,DC-26,EB-3,
HMC-1,MS-1,PB-26,SC-9,
SMC-30,ST-2,TU-35B**



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CIRCUIT DESCRIPTION

• DESTINATION

TR-2600A : K, M1, M2, M3, X
TR-2600E : T, W

• DESTINATION ABBREVIATION

K : U.S.A. M1, M3 : General
M2 : Latin America, Canada
T : England W : Europe
X : Australia

• DESTINATION CODE FOR REFERING PARTS LIST

General TR-2600A/E

010	021	022	023	051	061	071
K	M1	M2	M3	T	W	X

RX unit X55-138X-XX

010	021	022	061	071
K	M3	M1	T · W	M2 · X

TX unit X56-147X-XX

010	051	061
K · M1 · M2 · M3 · X	T	W

DCL unit X57-111X-XX

010
K · M1 · M2 · M3 · T · W · X

RECEIVER RX UNIT (X55-1380-XX)

The RX unit basic configuration employs a double conversion superheterodyne reception system in which the first IF is 10.7MHz and the second IF is 455kHz.

• Signal system

A received signal supplied through the Low Pass Filter circuit from the TX unit is amplified by RF amplifiers Q1 : 2SC2671(H) and Q2 : 2SC2668(Y). It is then converted by the first mixer Q3 : 2SK192A(Y) to the first IF at 10.7MHz. The VCO injection signal is supplied from the TX unit.

The RF amplifiers are tuned in two bands, controlled by the BSW signal from the TX unit: the low frequency band is 140 to 150MHz and the high frequency band is 150 to 160MHz.

The converter output is filtered through MCF F1 at 10.7MHz, and is then 1st IF amplified by Q4 and Q5 : 2SC2668(Y) before being fed to Q6 : MC3357P, where the signal is converted to 455kHz by oscillator X1 (10.245MHz), passed through the 455kHz ceramic filter F2, amplified, limited, and finally detected. Q6 also contains the squelch circuit. Part of the signal sampled from F2 is fed to the S meter amplifiers Q11 and Q12 : 2SC2603(E).

The S meter circuit is energized and operates only when the squelch circuit is open via voltage switch Q10 : DTC143TS. The detected signal, after passing through the AF gain control, is power amplified by Q8 : BA526 and is fed to the speaker. Q7 : 2SC2603(E) cuts the audio signal by means of the AFC signal from the Control unit. Q9 : DTC124ES provides "Beep" tone injection to the speaker while Q8 is off.

Item	Rating
Nominal center frequency	10.7MHz
Pass bandwidth	±7.5kHz or more at 3dB
Attenuation bandwidth	±25kHz or less at 40dB ±45kHz or less at 60dB
Guaranteed attenuation	70dB or more within ±1MHz Spurious level = 40dB or more at fo-fo + 500kHz, 80dB or more at fo-(900-920kHz)
Ripple	1.0dB or less
Loss	1.5dB or less
Input and output impedance	3kΩ/0pF

Table 1 MCF (L71-0228-05) (RX unit F1)

CIRCUIT DESCRIPTION

Item	Rating
Center frequency of 6dB bandwidth	Within 455kHz±1.5kHz
6dB bandwidth	±7.5kHz or more
40dB bandwidth	±15kHz or less
Ripple (within 455±1.5kHz)	1.5dB or less
Guaranteed attenuation (Within 455±100kHz)	27dB or more
Loss	6dB or less
Input and output impedance	1.5kΩ

Table 2 Ceramic filter (L72-0335-05) (RX unit F2)

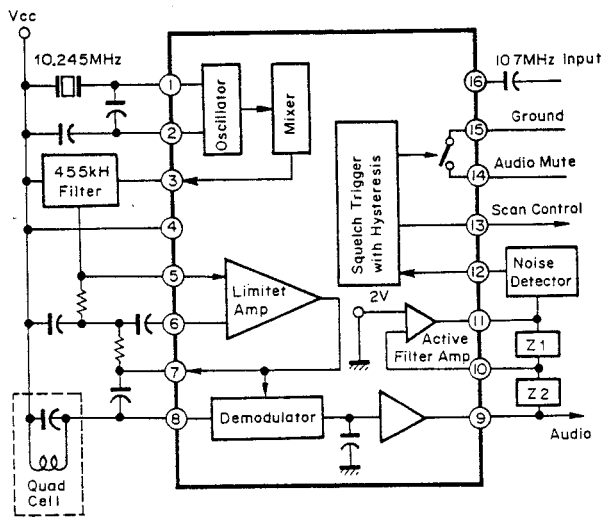


Fig. 1 MC3357P Block diagram (RX unit Q6)

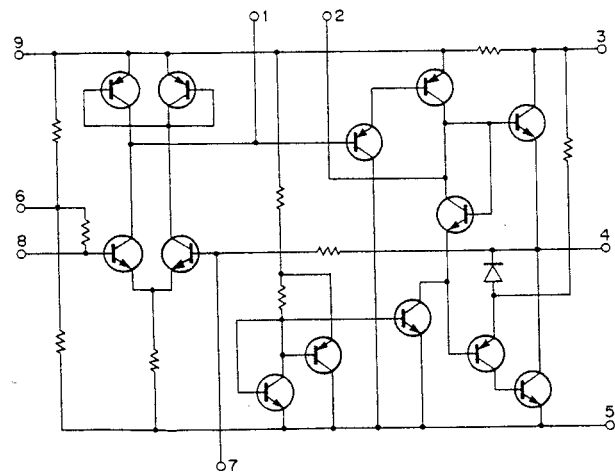


Fig. 2 BA526 Equivalent circuit (RX unit Q8)

Item	Symbol	Rating	Unit
Operating voltage	Vcc	9	V
Power dissipation	Pd	700	mW
Operating temp.	Topr	-10~+65	°C
Storage temp.	Tstg	-30~+125	°C

Table 3 BA526 Max. rating

Item	Symbol	Condition	Rating			Unit
			Min.	St.	Max.	
Current W/O signal	ICC	VIN = 0V	—	12	24	mA
Voltage gain	GVC	RNF = 47Ω, VIN = 2.5mV	48	52	54	dB
Max output	PO MAX	VIN = 25mV	600	700	—	mW
Rated output	PO	T.H.D = 10%	350	430	—	mW
Output noise voltage	VNO	Rg = 0Ω	—	0.25	0.7	mV
Distortion	T.H.D	PO = 50mW	—	0.4	2	%
Input impedance	ZIN	1kHz, PO = 50mW	—	22	—	kΩ

Table 4 BA526 Electrical characteristic

● Power supply circuit

The C5 line (common 5V) is a regulated power supply consisting of Q35 : LVC517 and Q21 : 2SB698 and is derived from the CB (common B+) line. Q35 is a compact 3-pin regulator and Q21 is a current booster.

Item	Symbol	Rating	Unit
Operating temp.	Topr	-20 ~ +60	°C
Stage temp.	Tstg	-30 ~ +125	°C
Input current	Vin	15	mA
Output current	IL	100	mA
Power consumption	PD	300	mW

Table 5 LVC517 Max. rating (RX unit Q35)

Item	Symbol	Condition	Rating			Unit
			Max.	St.	Min.	
Input current	Ii	Vi = 9.0V, Io = 0mA	0.5	—	2.5	mA
Output voltage	Vo	Vi = 9.0V, Io = 20mA	4.8	5.0	5.2	V
Output voltage temp. coefficient	Δ V01	Ta = -20~+60°C Vi = 9.0V, Io = 20mA	—	0.01	—	%/°C
Input regulation	Δ V02	Vi = 5.6~10V, Io = 30mA	—	—	±0.2	%/V
Load regulation	Δ V03	Vi = 9.0V, Io = 0~30mA	—	—	±0.1	%/mA
Ripple compressibility	RegIN	Vi = 9.0V, Io = 20mA f = 100Hz, 1V P-P	50	—	—	dB

Table 6 LVC517 Electrical characteristic

CIRCUIT DESCRIPTION

● Control circuit

1) Squelch system

To minimize battery drain, the squelch switch is closed during reception (When the DCS switch is on), and power to the AF output IC and S meter amplifiers is shut off during transmission. In the **K,X, & M** models the AF IC remains on during tone pad operation to permit monitoring keypad tones.

The logic state of each section in each mode is given below.

- During transmission R5 goes low, and T5 goes high.

	BSY	A	B	C
SQ OPEN	L	H	H	H
SQ CLOSE	H	L	L	L

	CL	E	D	A	B	C
DCS ON	H	L	L	*	*	*
DCS OFF	L	H	H	L	L	L

*: Varies according to whether the squelch switch is open or closed.

- During reception Because of T5, Q18 turns on so that both A and B go low.
- (**K,M,X** models only) when the DTMF pad is keyed, F goes high and Q19 turns on, so that D goes low and A and B go high.

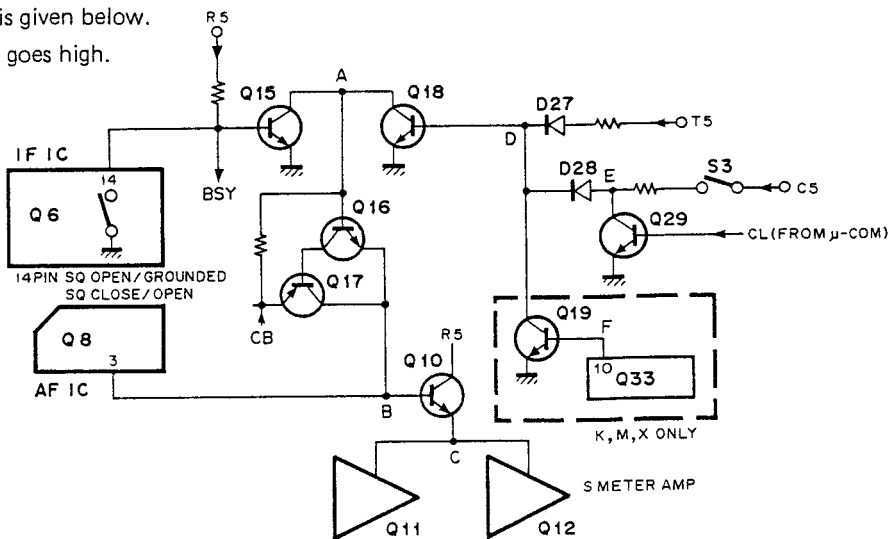


Fig. 3 Control circuit (squelch) RX unit

2) Standby system

- During reception mode

D14 conducts, so that voltage is applied to Q23, which turns on. this turns on Q22 so that B+ voltage is developed during reception. Q26 is always on if the TXS terminal is low. However, since Q28 is off during reception, no current flows from Q26 emitter to collector. This results in both Q25 and Q24 remaining off.

- During transmission mode

S8 (PTT) is closed. When Q27 and Q28 turn on, current flows from Q26 emitter to collector. Q25 and Q24 turn on, 2nd T5 B+ voltage is developed during the transmission mode. At this point, since the TC line is low, D15 conducts with the result that Q23 and Q22 turn off.

- Manual TX stop

Because the TC lines can be open by S1, the transceiver cannot enter transmission mode when the PTT switch is depressed.

- TXS terminal

While the transmission out-of-band inhibit is on, digital codes are being indicated or while the call sign is being indicated, a logic high signal is sent from the microprocessor to the TXS terminal, and Q26 turns off. At the same time, the level at the base of Q23 goes high through R60 and R57 and the transceiver cannot enter transmission mode.

- During digital code transmission

A logic high signal is fed to the ATX and ME terminals from the microprocessor with the result that Q34 turns on. This mutes the audio input from the microphone, and at the same time, the unit enters transmission mode.

- During touch tone transmission (**K,M, & X** models only)

If the keypad is operated during transmission DTMF, modulation is available. At this time, Q33 pin 10 goes high, and this is fed to Q34 via D29 and D30. This allows Q34 to turn on, which mutes the microphone input. At the same time, since once DTMF keypad operation begins, C86 charges and the transmission mode is held for approx. 2 seconds.

CIRCUIT DESCRIPTION

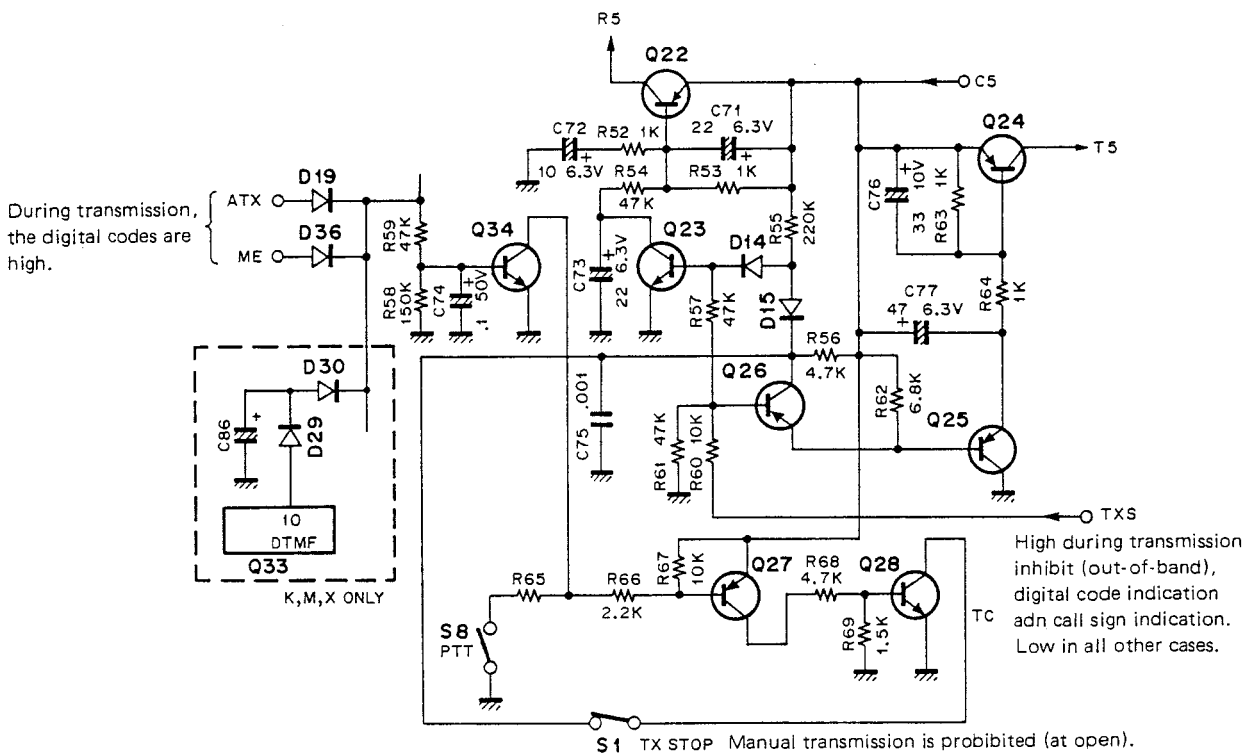


Fig. 4 Control circuit (standby) RX unit

TRANSMITTER TX UNIT (X56-1470-XX)

The voice audio signal from the microphone is amplified by IC2 : LA6458S located on the TX unit. Its output is used to directly modulate the VCO (Voltage Controlled Oscillator) through D11 : MA856. The VCO output is amplified by Q2 : 2SC2668(Y) and Q3, further amplified by pre-driver Q4, driver Q5 and final power amplifier Q6 : 2SC1947. The VCO signal from Q3 is also amplified by Q1 and is applied to the receiver first mixer on the RX unit as the local oscillator signal.

	VCBO	VEBO	VCEO	IC	PC	PC	Tj	Tstg	Ta
Test Conditions			RBE = $\infty \Omega$		Tc = 25°C	Ta = 25°C			25 ± 3°C
Maximum Rating	35V	4V	17V	1A	10W	1W	+175°C	-65 ~ +175°C	

Table 7 2SC1947 Max. rating (TX unit Q6)

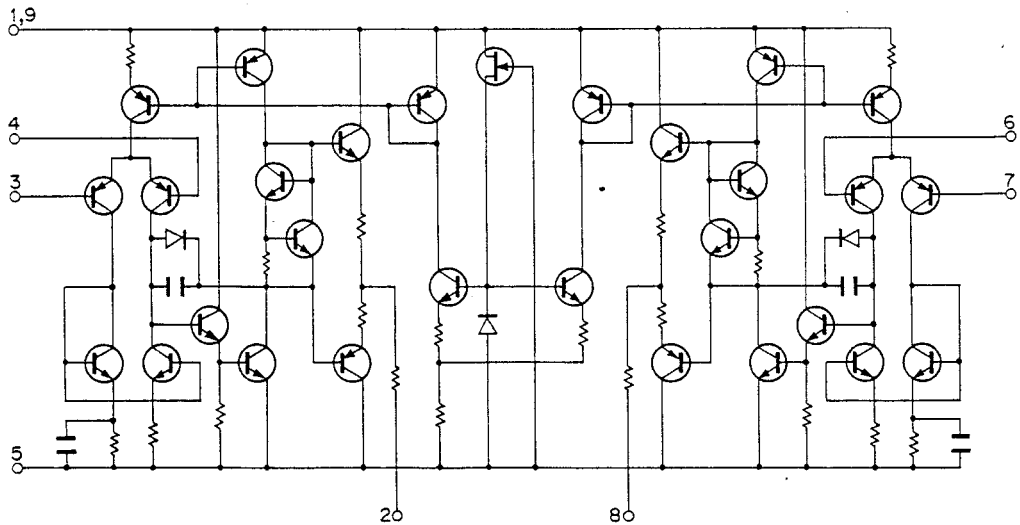


Fig. 5 LA6458S Equivalent circuit (TX unit IC2)

CIRCUIT DESCRIPTION

• PLL section

The VCO Q10 : 2SK192A uses a grounded-drain Colpitts oscillator. During reception, D8 conducts to connect TC6 to the oscillator, thus lowering the VCO frequency. When the frequency is 140 to 149.995MHz, D16 connects TC5 to the oscillator, again lowering the VCO frequency. L25 and C85 in the collector circuit of Q14 serve as a peaking circuit to improve the frequency response. In the emitter circuit of Q15, D12 adds C84 in parallel with R59 to boost the stage gain during transmission and lower the gain during reception.

Under normal conditions (During phase Lock), IC1 : MC145155P pin 8 is high, whereas if the PLL unlocks, it is low. When switching transistor Q7 turns off, the emitter circuits of Q1, Q2 and Q3 switch off, inhibiting both transmission and reception.

IC1 : MC145155P is a PLL IC containing a reference oscillator, frequency divider, phase comparator latch and program counter. In this unit, this IC is used to operate the following:

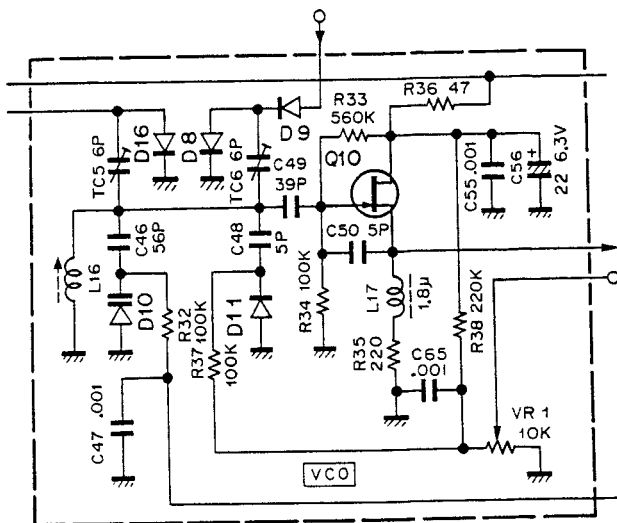


Fig. 6 VCO circuit

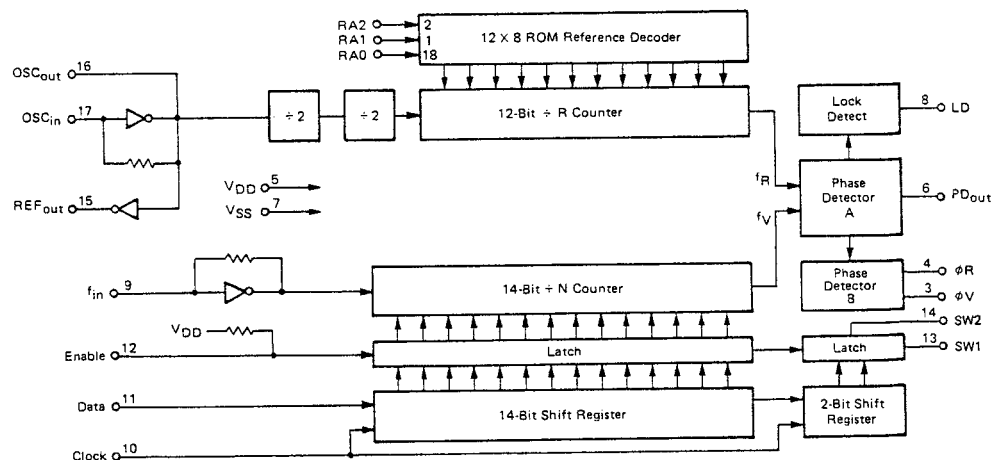
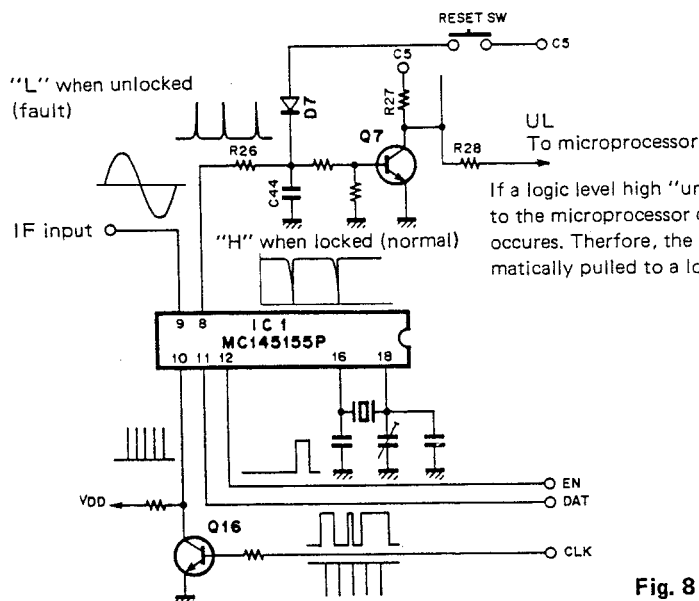


Fig. 7 MC145155P Block diagram (TX unit IC1)



Relation between respective waveforms
→ On completion of keyboard input, one cycle is output (approx. 5 to 10 msec.)

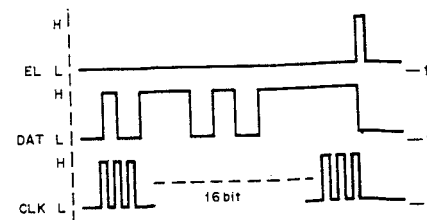


Fig. 8 MC145155P Operation

CIRCUIT DESCRIPTION

Item	Symbol	Condition	Rating			Unit
			Min.	St.	Max.	
Input voltage	V ₁ (off)	V _{cc} = 5V, I _o = 100μA	—	—	0.5	V
	V ₁ (on)	V _o = 0.3V, I _o = 2mA	3.0	—	—	V
Output voltage	V _o (on)	I _o = 10mA, I _i = 0.5mA	—	0.1	0.3	V
Input current	I _i	V ₁ = 5V	—	—	0.18	mA
Output current	I _o (off)	V _{cc} = 30V, V ₁ = 0V	—	—	10	μA
DC current gain	G _I	I _o = 5mA, V _o = 5V	68	—	272	—
Input impedance	R ₁		—	47	—	kΩ
I/O impedance	R ₁ /R ₂		0.8	1.0	1.2	—

Table 8 DTC144ES Electrical characteristic (TX unit Q7, 16)

• PLL IF section

The superheterodyne oscillator employs third overtone crystal oscillators. During low frequency band reception (140.000 to 149.995MHz), X2 (42.6MHz) oscillates via Q13 : 2SC2347, at an output frequency of 127.8MHz, and during high frequency band reception (150.000 to 159.995 MHz), X3 (45.933MHz) oscillates with an output frequency of 137.8MHz. The **T,W,M2** and **X** model types are factory-preset so only the low band crystal oscillator X2 operates. The PLL IF, after mixing with the VCO output at Q14 : 2SC2668, is factory-set (No over-range capability) as follows:

Type	RX/TX	Frequency
K, M1	RX	1.5 — 11.495MHz
	TX	14.2 — 21.195MHz
X, M2	RX	5.5 — 9.495MHz
	TX	16.2 — 20.195MHz
M3	RX	1.5 — 11.495MHz
	TX	12.2 — 22.195MHz
T, W	RX	5.5 — 7.495MHz
	TX	16.2 — 18.195MHz

Table 9

DCL UNIT (X57-1110-10)

The Digital Coded Squelch (DCS) circuit consists of IC3 slave microprocessor : μPD7507G, IC2 modem : MN6127A and IC1 op amp : NJM4558M. Pin assignments of IC2 and IC3 are shown in **Tables 10** and **11**. The μPD7507G microprocessor clock operates at approximately 200kHz (pin 5&9 (CL1, CL2)) and is internally divided by 2 to operate at approximately a 10μsec. machine cycle.

• DCS Reception operation

A received signal supplied from the RX unit (X55-1380-XX) audio stage is amplified by IC1 to approximately a 0.35V input level for the modem, and is then input to pin 5 (R1) of the modem. In the modem, the MSK (Minimum Shift Keying) modulated input signal is bandpass filtered to attenuate any of out-band noise, and is then demodulated to an NRZ (Non Return Zero) signal by delay detection. The demodulated signal is output to pin 25 (RD) and the play-back clock (1200 baud) is output to pin 26 (RT).

IC2 outputs data to RD at the leading edge of RT. At the leading edge of RT, IC3 interrupts INT0 and retrieves data from IC2 RD to IC3 P10. During this time, frame sync detection (15 bits) is performed. Once all 15 bits coincide, the Hagelburger decode processing begins. As completion of the decoding process, a check is performed to ascertain whether the frequency data (See **Table 12**) is decimal or all F (Hexadecimal).

MTC (pin 25 (P40)) is then sent high to transfer data to the microprocessor. The master microprocessor always detects communication requests from the slave microprocessor; if it detects a communications request (MTC = High), the master microprocessor retrieves data at an 8 bit preset data length via serial interface (SCK, SI and SO). The input data is processed according to the DCS system conditions.

• DCS Transmission operation

In opposition to reception mode operation, when the master microprocessor detects the transmission mode, it brings the transmission request line CTM (pin 43 (P12)) to IC3 high. Upon detection of this transmission request, IC3 retrieves data via the serial interfaces.

When all data is retrieved, IC3 performs Hagelburger encode processing, at the completion of which IC3 makes the ME line (pin 29 (P43)) high and modulator enable ME (pin 21) active.

Because IC2 retrieves the level at the SD pin at the leading edge of the transmission clock (ST pin), and in order to lock, IC2 interrupts using INT1 at the leading edge of the ST pin, thus allowing data to be transferred from P42 to the SD pin during this interrupt routine. IC2 is capable of obtaining the MSK-modulated signal by sync-inputting the NRZ signal in lock with the transmission clock. When data is to be transmitted, all the frequency data should be F (Hexadecimal).

• Reset function

Since slave microprocessor IC2 does not have any data to be backed up in RAM, no back-up is performed. Therefore, because it is always necessary to reset when power is switched on, this is automatically achieved by means of a reset circuit consisting of lambda diode D3 : MA522(Q) and Q1 : 2SC2712(Y). The reset switch on the main unit permits manual resetting as well.

CIRCUIT DESCRIPTION

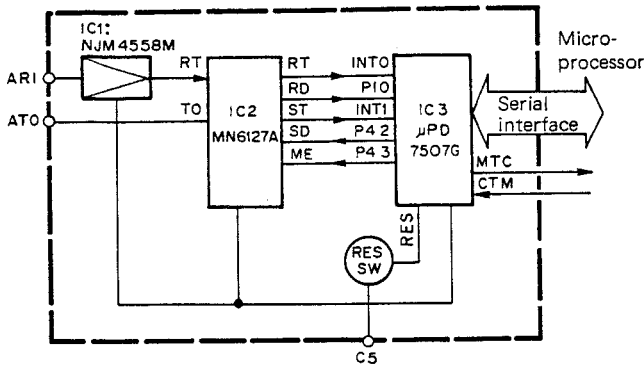


Fig. 9 DCL unit block diagram

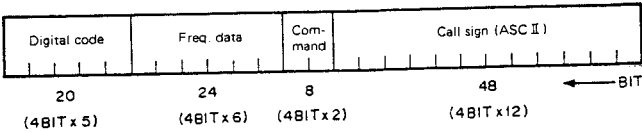


Fig. 10 Data structure

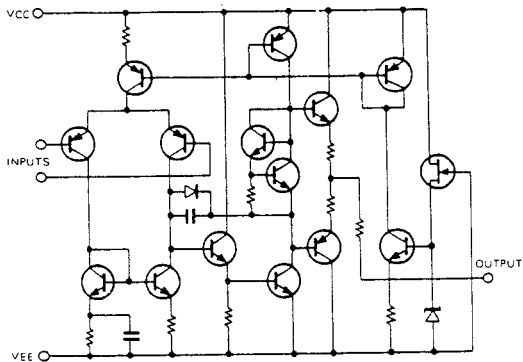
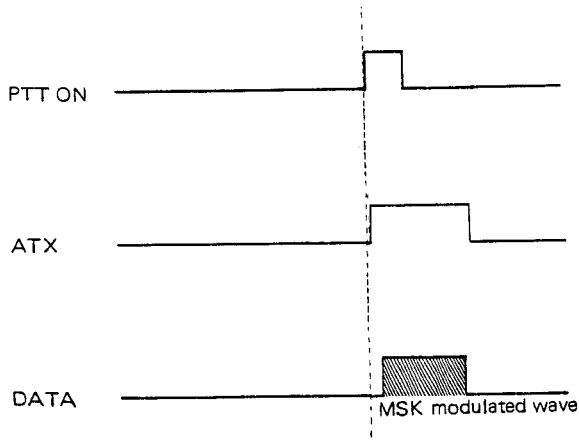


Fig. 11 NJM4558M Equivalent circuit (DCL unit IC1)

Item	Symbol	Condition	Rating			Unit
			Min.	St.	Max.	
Input offset voltage	V _{IO}	R _s ≤ 10kΩ	—	—	6.0	mV
Input offset current	I _{IO}		—	—	200	nA
Input Bias current	I _I		—	—	500	nA
Voltage gain	G _V	R _L ≥ 2kΩ, V _o = ±10V	20000	—	—	—
MAX output voltage	V _{OM}	R _L ≥ 10kΩ	±12	—	—	V
In-phase input voltage range	V _{ICM}		±12	—	—	V
In-phase signal elimination	CMR	R _s ≤ 10kΩ	70	—	—	dB
Power source regulation eliminate	SVR	R _s ≤ 10kΩ	—	—	150	μV/V
Power consumption	P _T		—	—	170	mW

Table 10 NJM4558M Electrical characteristic

DCS operation



Data transmission

Before the main microprocessor transfers the data to the DCS microprocessor, the main microprocessor outputs the communication request signal. When the DCS microprocessor receives this signal, the microprocessor enters the transfer routine.

The data is output at the leading edge and is received by the DCS microprocessor at the trailing edge of the CLK signal. The 8-bit signal is transferred each time, according to its length.

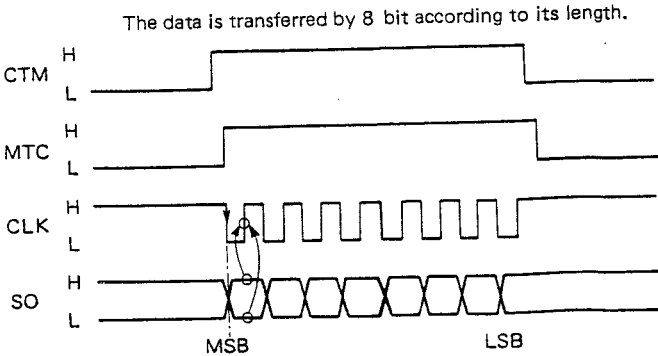
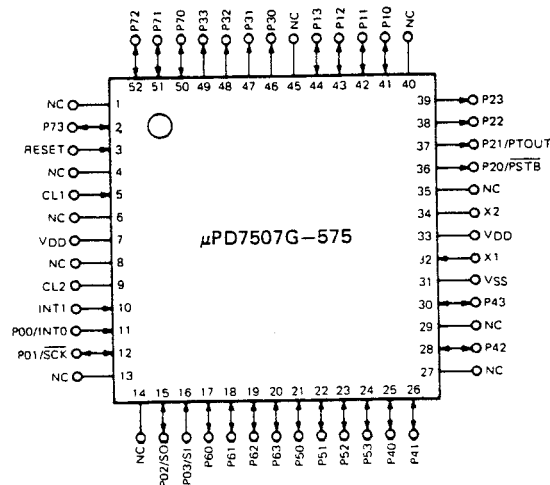


Fig. 12 Timming chart

CIRCUIT DESCRIPTION

Fig. 13 μ PD7507G-575-00 (DCL unit IC3)

Pin No.	Pin Name	I/O	Function	Pin No.	Pin Name	I/O	Function
1	NC			27	NC		
2	P73	I	GND	28	P42	O	SD transmission data
3	RESET		RESET input	29	NC		
4	NC			30	P43	O	ME modulator enable
5	CL1		System clock oscillator pin	31	VSS		GND
6	NC			32	X1		GND
7	VDD		Power supply +5V	33	VDD		Power supply (connected to pin 7)
8	NC			34	X2		Open
9	CL2		System clock oscillator pin	35	NC		
10	INT1	I	ST transmission clock	36	P20		Open
11	INT0	I	RT reception clock	37	P21		Open
12	SCK		CK clock for communication	38	P22		Open
13	NC			39	P23		Open
14	NC			40	NC		
15	SO	O	SO data output for communication	41	P10	I	RD reception data
16	SI	I	SI data input for communication	42	P11	I	Pull-up
17	P60	I	GND	43	P12	I	CTM communication request signal
18	P61	I	GND	44	P13	I	Pull-down
19	P62	I	GND	45	NC		
20	P63	I	GND	46	P30		Open
21	P50	O	Open	47	P31		Open
22	P51	O	Open	48	P32		Open
23	P52	O	Open	49	P33		Open
24	P53	O	Open	50	P70		Pull-up
25	P40	O	MTC communication request signal	51	P71		GND
26	P41	O	Open	52	P72		Pull-up

Table 11 μ PD7507G-575-00 Terminal function (DCL unit IC3)

CIRCUIT DESCRIPTION

Pin No.	Pin Name	Function	Pin No.	Pin Name	Function
1	VDD	Power supply +5V	15	1/2 VDD	Op amp center point voltage
2	RO	Internal reception filter output signal	16	VSS	GND
3	DI	Demodulator inverting input	17	TO	Transmission filter output signal
4	DN	Demodulator non-inverting input	18	MO	Not used
5	RI	Reception signal input	19	RF	Center point reference voltage
6	L4	GND	20	TS	Not used
7	L3	Open	21	ME	Modulator enable
8	L2	Open	22	SD	Transmission data input pin
9	L1	GND	23	ST	Transmission clock
10	EX	Not used	24	DE	Not used
11	DO	Not used	25	RD	Reception data output pin
12	LO	Low-pass filter output signal	26	RT	Reception clock
13	CI	Clock playback circuit inverting input	27	XO	Crystal oscillator connection pin
14	CN	Clock playback circuit non-inverting input	28	XI	Crystal oscillator conneciton pin

Table 12 MN6127A Terminal function (DCL unit IC2)

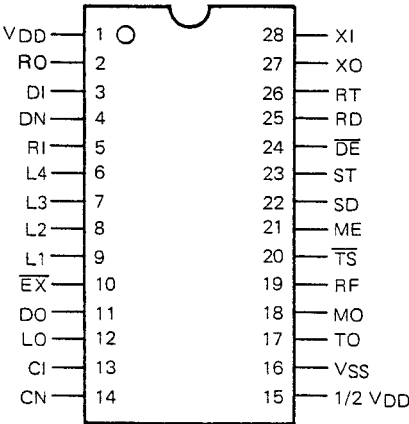


Fig. 14 MN6127A (DCL unit IC2)

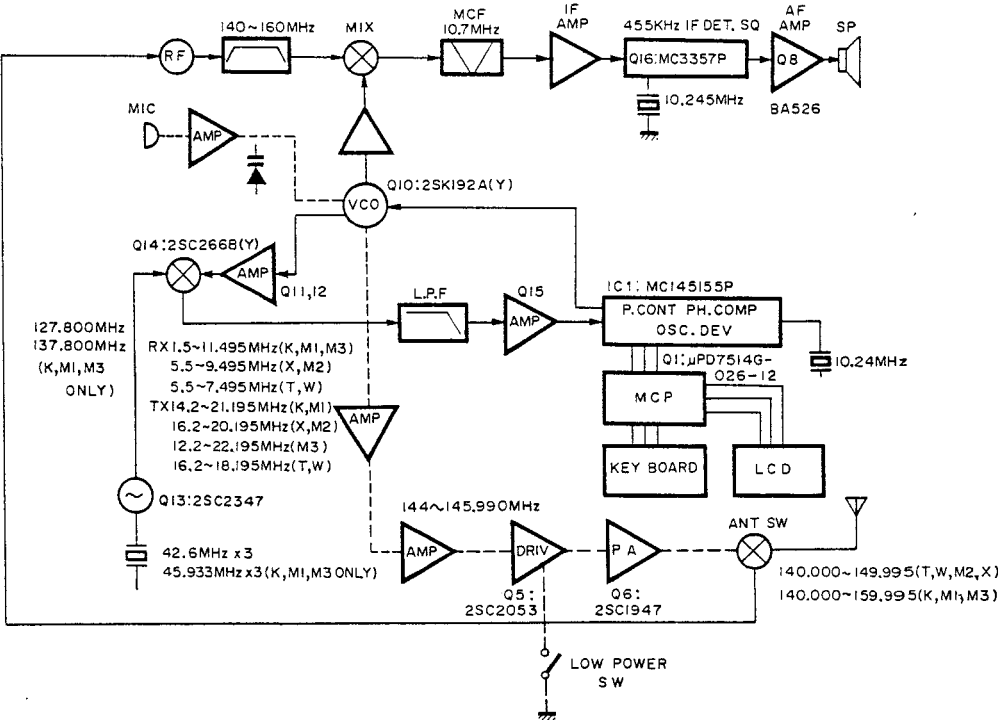


Fig. 15 Frequency-related block diagram

CIRCUIT DESCRIPTION

Terminal No.	Terminal name	In-put	Out-put	Function	Terminal No.	Terminal name	In-put	Out-put	Function
1	P41		○	TX STOP output H : Active	50				
2	P40		○	Output CD ON/OFF	51	P73			CTM, EN from Main μ -processor
3	X2			Open	52	P72			R/R SW Detect, H : Active
4	X1			GND	53	P71			DCL SW CHECK, H : Active
5					54	P70			MTC, EN from DCL
6					55	P22		○	CHL, light signal output
7					56	P21/POUT		○	ATX Auto TX, H : Active
8				Open	57	P20/PSTB		○	BAL, 145 : L, 155 : H
9			○	LCD segment signal	58	P13	○		BUSY Detect, BUSY : L VACANT : H
10					59	P12	○		TX Detect, H : Active
11			○	Open	60	P11	○		UNLOCK Detect, H : Active
12					61	P10	○		CHL SW Detect, H : Active
13					62	P33			PLL EN
14			○	LCD segment signal	63	P32			AFC audio output cut signal, H : Active
15					64				
16				Open	65	P31			K. LOCK, CALL CHECK
17			○	LCD segment signal	66	P30			Type check To P60—63 through diodes
18					67	P03/SI	○		Serial data input (from DCLS)
19					68	P02/SO		○	Serial data output (PLL, DCLS)
20			○	LCD segment signal	69	P01/SCK			PLL, CLOCK for M/A, Normally H
21					70	P00			BACK UP Detect, L : Active
22				Open	71	P63	○		KEY SCAN input C4
23			○	LCD segment signal	72	P62	○		KEY SCAN input C3
24					73	P61	○		KEY SCAN input C2
25				Open	74	P60	○		KEY SCAN input C1
26			○	LCD segment signal	75	P53	○		KEY SCAN output R4
27				Open	76	P52		○	KEY SCAN output R3
28			○	LCD segment signal	77	P51		○	KEY SCAN output R2
29					78	P50		○	KEY SCAN output R1
30	INT1			GND	79	P43			BAH, 145 : H, 155 : L
31	RESET			RESET SW	80	P42		○	BZ Beep sound
32									
33									
34									
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Table 13 μ PD7514G-026-12 Terminal function (Key board ass'y IC1)

CIRCUIT DESCRIPTION/DISASSEMBLY

Part No.	W09-0315-05	W09-0317-05	W09-0319-05
Rating	Primary side: AC 120V 60 Hz Secondary side: DC 10.15V DC 42.5ma	Primary side: AC220V 50/60 Hz Secondary side: DC 10.15V DC 42.5ma	Primary side: AC 240V 50 Hz Secondary side: DC 10.15V DC42.5ma
Output voltage (resistance loaded)	At 0mA: DC 14.9V ± 5% At 42.5mA: DC 6.2V ± 5%	At 0mA: DC 12.5V ± 5% At 42.5mA: DC 5.5V ± 5%	At 0mA: DC 12.6V ± 5% At 42.5mA: DC 5.6V ± 5%
Weight	About 130g	About 240g	About 220g
Consumed power	4W or less with 60 Hz at rated input and battery loaded.	4W or less with 50 Hz at rated input and battery loaded.	4W or less with 50 Hz at rated input and battery loaded.
Destination	U.S.A./GENE.M1	Europe/GENE. M3	Australia/ New Zealand

Table 14 Charge specifications

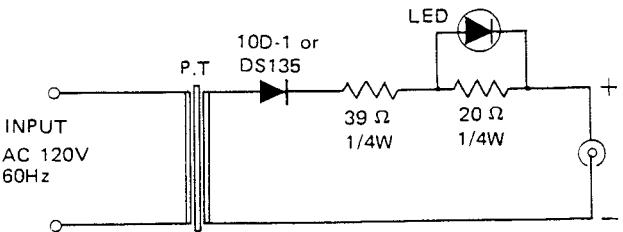


Fig. 16 W09-0315-05 (K,M1 type)

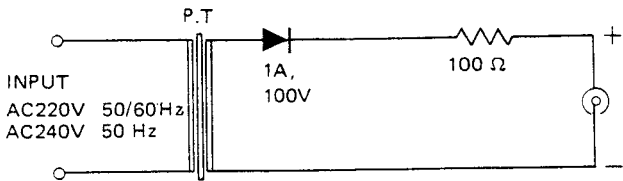
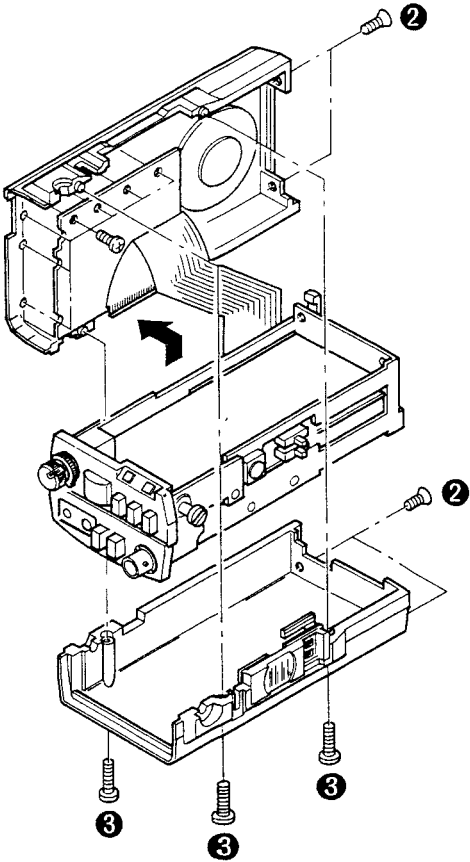
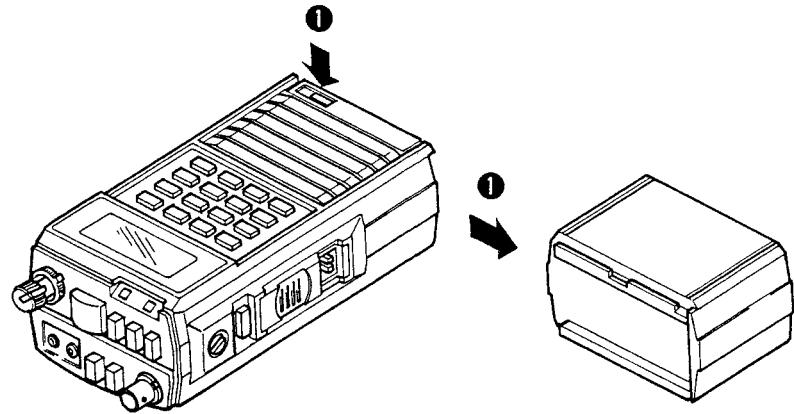


Fig. 17 W09-0317-05 (M2,M3 type)
W09-0319-05 (X type)

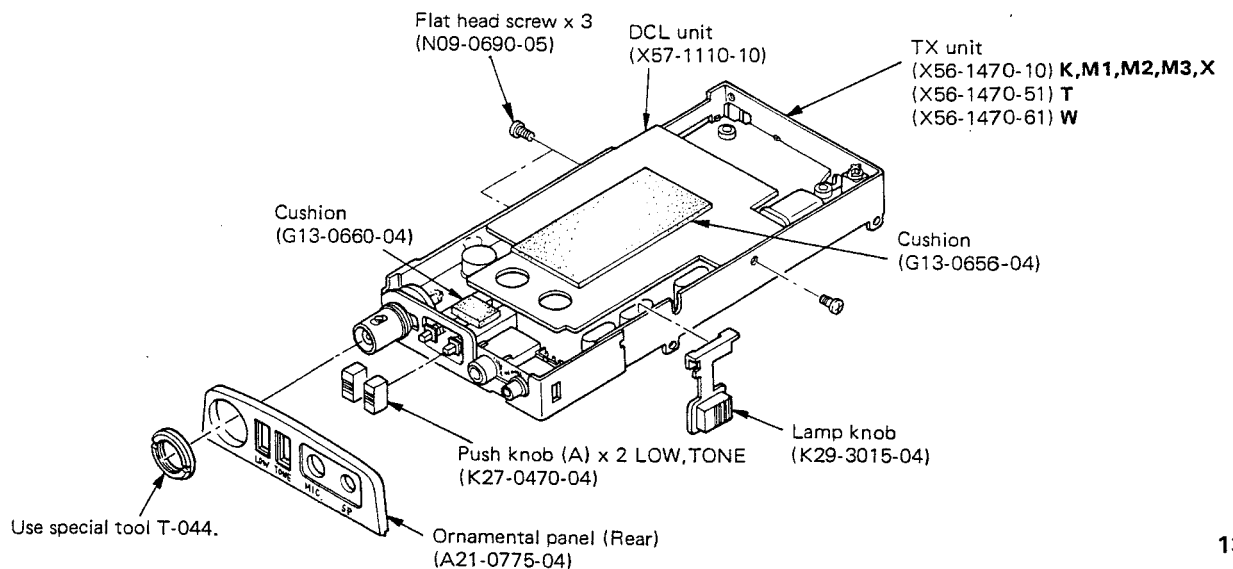
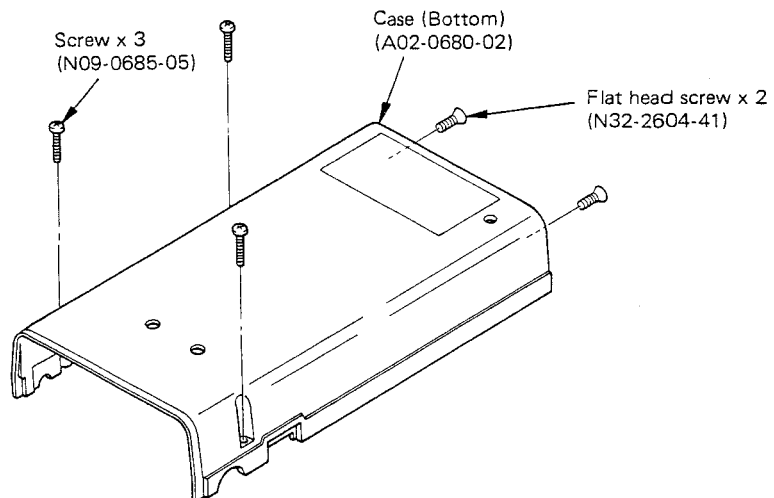
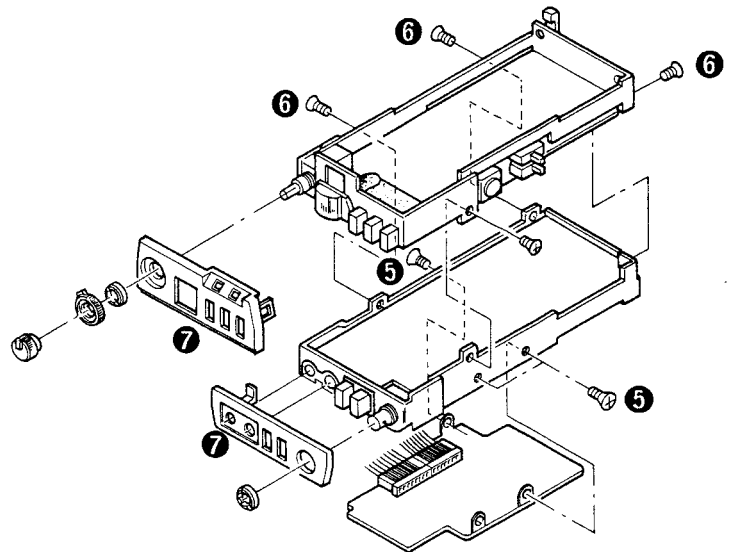
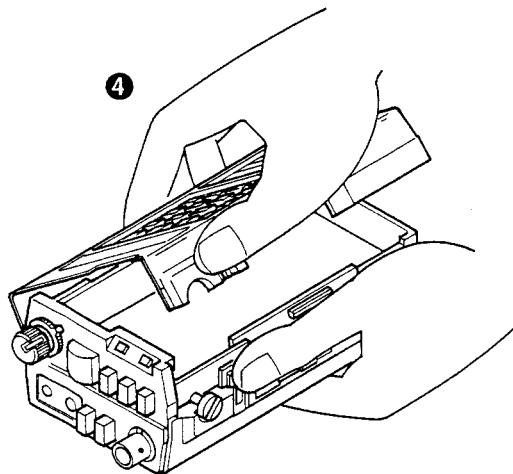
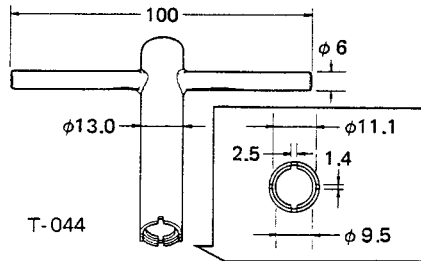
Removing cases and PC boards

- ① Keeping the release button depressed, pull out the battery pack to the right.
- ② Remove 4 screws from the battery pack side plate.
- ③ Remove 3 screws from the top and bottom cases.
- ④ Open the case to the front by holding it with both hands as shown in the figure.
(Claws are located in the opposite side.)
- ⑤ Remove 3 screws from the DCL unit mounting bracket.
- ⑥ After removing 4 screws, separate the TX and RX units.
- ⑦ Remove the ornamental panels from the TX and RX units.

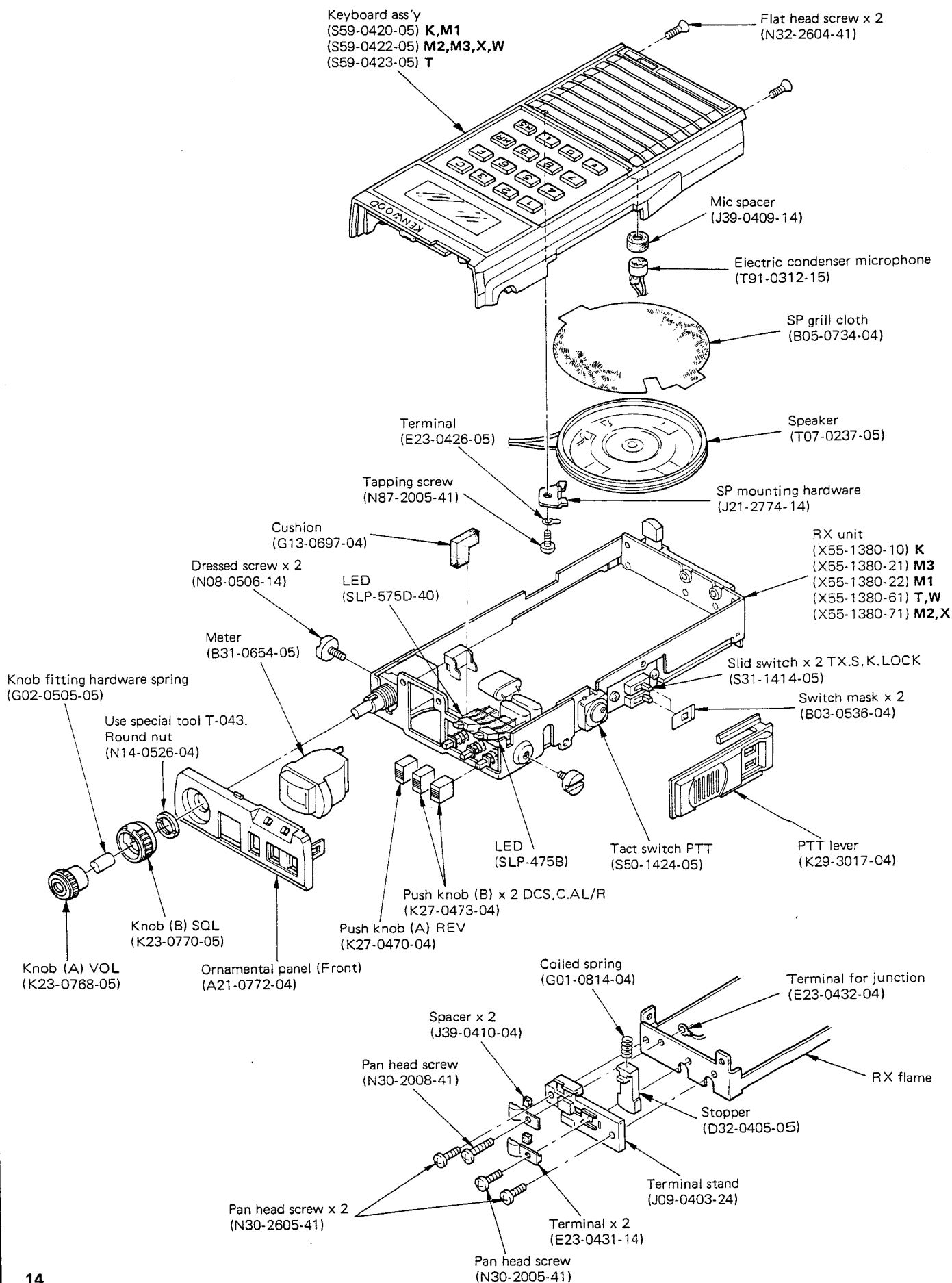


DISASSEMBLY TR-2600A/E

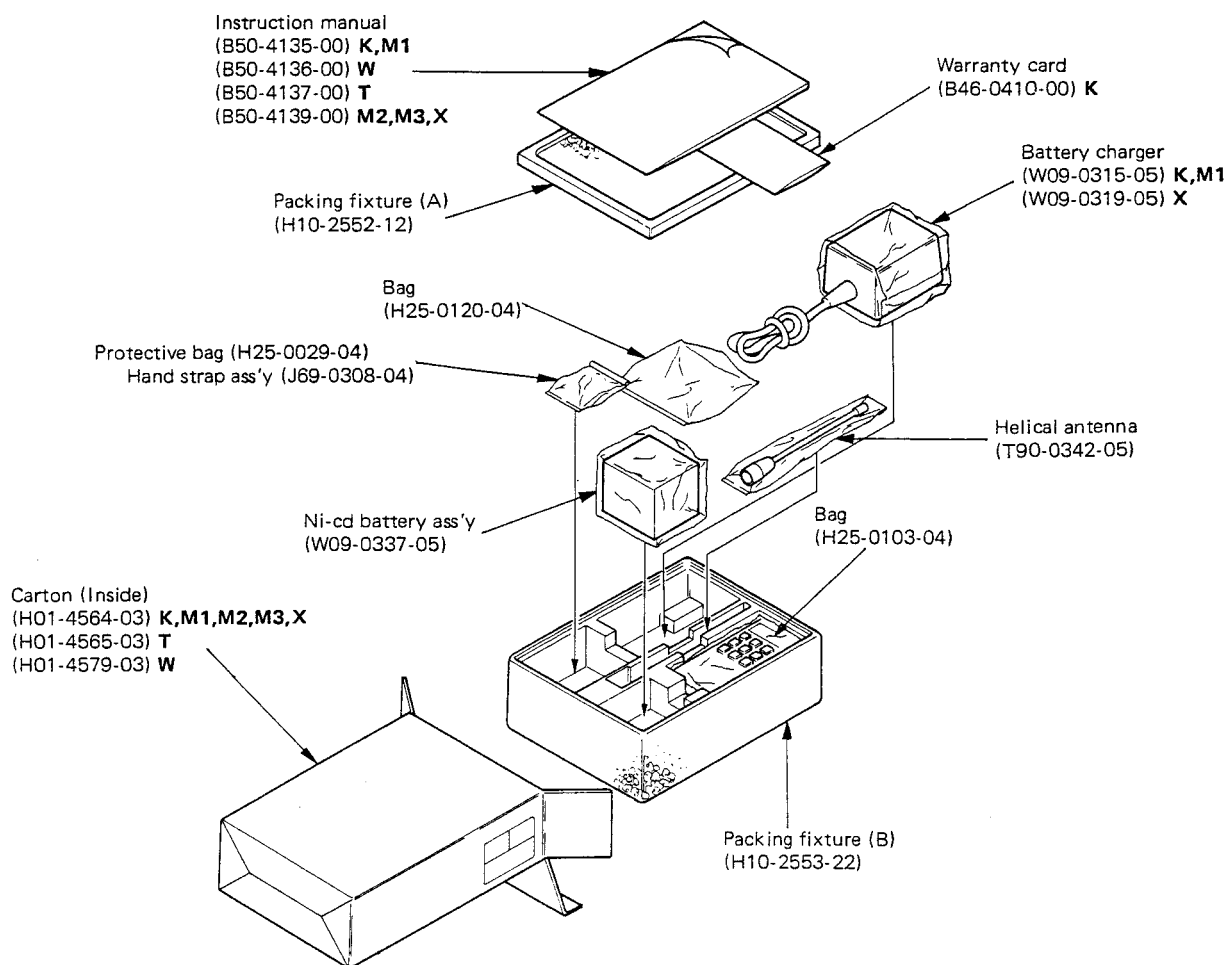
Special tool



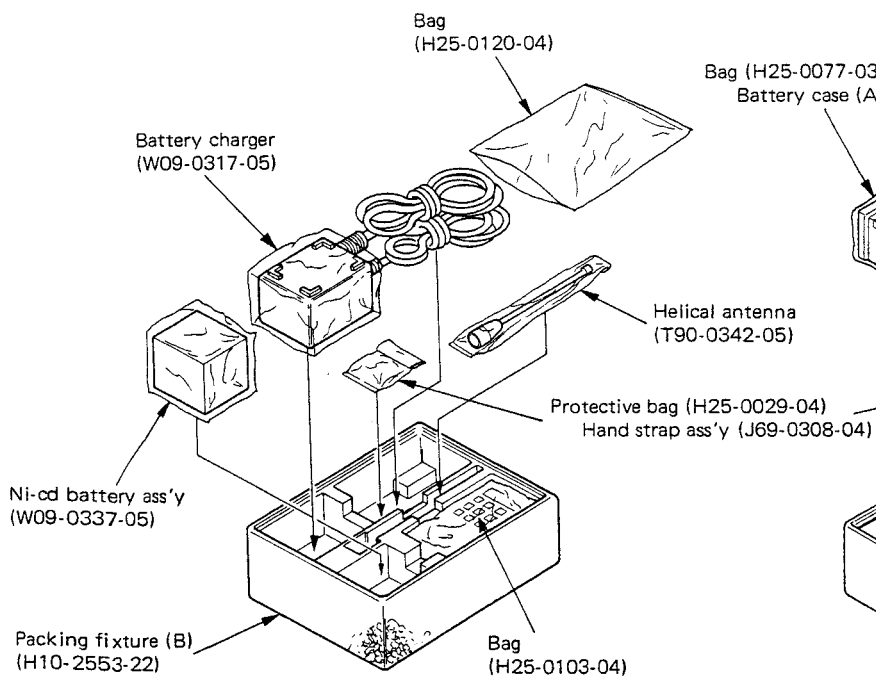
TR-2600A/E DISASSEMBLY



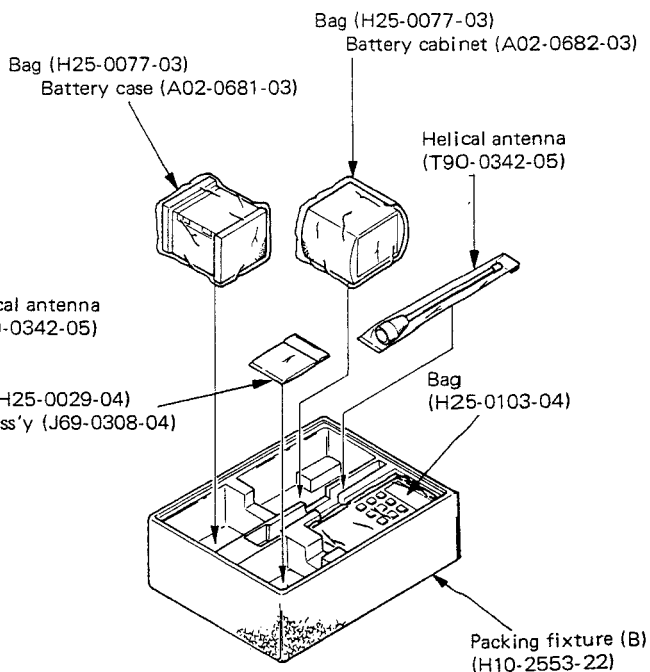
PACKING



M2,M3 type



T,W type



TR-2600A/E PARTS LIST

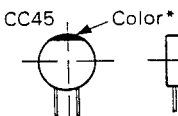
CAPACITORS

CC 45 TH 1H 220 J
1 2 3 4 5 6

- 1 = Type ceramic, electrolytic, etc. 4 = Voltage rating
2 = Shaperound, square, etc. 5 = Value
3 = Temp. coefficient 6 = Tolerance

• Temperature Coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	-80	-150	-220	-330	-470	-750



• Capacitor value

- 0 1 0 = 1pF
1 0 0 = 10pF
1 0 1 = 100pF
1 0 2 = 1000pF = 0.001μF

1 0 3 = 0.01μF

2 2 0 = 22pF
1st number Multiplier
2nd number

2nd Word	G	H	J	K	L
ppm/°C	± 30	± 60	± 120	± 250	± 500

Example CC45TH = -470±60 ppm/°C

• Tolerance

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	± 0.25	± 0.5	± 2	± 5	± 10	± 20	+ 40 -20	+ 80 -20	+ 100 -0	10μF-10~+50 4.7μF-10~+75

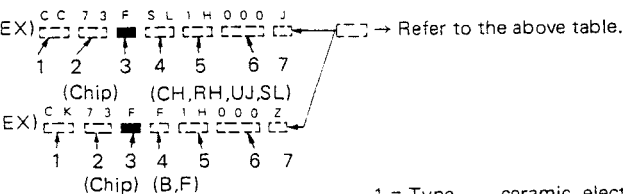
Code	B	C	D	F	G
(pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

Less than 10 pF

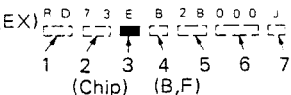
• Rating voltage

2nd word 1st word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	-
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	-
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	-

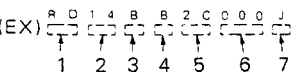
• Chip capacitors



• Chip resistor (Carbon)



• Carbon resistor (Normal type)



- 1 = Type ceramic, electrolytic, etc.
2 = Shape round, square, etc.
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance.

Dimension

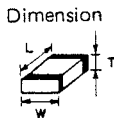
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25

Dimension

Dimension code	L	W	T	Wattage
E	3.2 ± 0.2	1.6 ± 0.2	0.57	2B
F	2.0 ± 0.3	1.25 ± 0.2	0.45	2A

Rating wattage

Cord	Wattage	Cord	Wattage	Cord	Wattage
2A	1 10W	2E	1 4W	3A	1W
2B	1 8W	2H	1 2W	3D	2W
2C	1 6W				



SEMICONDUCTOR

N : New parts

* : Please note that parts are sometimes not in stock and it takes much time to deliver.

Item	Re- marks	Part NO.
Diode		1N60A
		1S1555
		1SS106
		1SS133
		1SV123
		BB221
Zener diode		MA151A
		MA151WK
		MA522(Q)
		MA856
		MC921
		MI301
LED		SLP-475B
		SLP-575D-40

Item	Re- marks	Part NO.
TR		2SA1115(E)
		2SA698
		2SC1947
		2SC2053
		2SC2347
		2SC2603(E)
		2SC2668(Y)
		2SC2669(Y)
		2SC2671(H)
		2SC2712(Y)
Digital TR		DTA114E(S)
		DTA144E(S)
	N	DTC124E(S)
	N	DTC143TS
	N	DTC144E(S)

Item	Re- marks	Part NO.
FET		2SK192A(Y)*J
	N	BA526
	N	LA6458S
IC		LVC517
		MC3357P
		MC145155P*J
		MN6127A
		NE555P
	N	NJM4558M
		TCM5087N
		μPD7507G-575-00
		μPD7514G-021-12
		μPD7514G-026-12

PARTS LIST

Part NO.	Re- marks	Description	Q'ty											
TR-2600A/E GENERAL														
A02-0683-03	N	NI BATTERY CASE(TOP)	1	1	1	1	1	1	1	1	1	1	1	1
A02-0684-03	N	NI BATTERY CASE	1	1	1	1	1	1	1	1	1	1	1	1
A02-0680-12	N	CASE(BOTTOM)	1	1	1	1	1	1	1	1	1	1	1	1
A02-0679-11	N	CASE(UPPER)	1	1	1	1	1	1	1	1	1	1	1	1
A02-0690-11	N	CASE(UPPER)	1	1	1	1	1	1	1	1	1	1	1	1
A02-0679-11	N	CASE(UPPER)	1	1	1	1	1	1	1	1	1	1	1	1
A02-0681-03	N	BATTERY CASE(INSIDE)	1	1	1	1	1	1	1	1	1	1	1	1
A02-0682-03	N	BATTERY CABINET(OUTSIDE)	1	1	1	1	1	1	1	1	1	1	1	1
A21-0772-04	N	ORNAMENTAL PANEL	1	1	1	1	1	1	1	1	1	1	1	1
A21-0775-04	N	ORNAMENTAL PANEL	1	1	1	1	1	1	1	1	1	1	1	1
B03-0536-04	N	SWITCH MASK	2	2	2	2	2	2	2	2	2	2	2	2
B05-0734-04	N	SP GRILE	1	1	1	1	1	1	1	1	1	1	1	1
B10-0666-08	N	FRONT GLASS	1	1	1	1	1	1	1	1	1	1	1	1
B11-0421-05	N	L.G.P	1	1	1	1	1	1	1	1	1	1	1	1
B31-0654-05	N	METER	1	1	1	1	1	1	1	1	1	1	1	1
B40-3511-04	N	MODEL NAME PLATE	1	1	1	1	1	1	1	1	1	1	1	1
B40-3512-04	N	MODEL NAME PLATE	1	1	1	1	1	1	1	1	1	1	1	1
B40-3511-04	N	MODEL NAME PLATE	1	1	1	1	1	1	1	1	1	1	1	1
B42-2351-04	N	LABEL(A)	1	1	1	1	1	1	1	1	1	1	1	1
B42-1716-04	N	LABEL(B)	1	1	1	1	1	1	1	1	1	1	1	1
B42-1745-04	N	SERIAL NO. LABEL	1	1	1	1	1	1	1	1	1	1	1	1
B42-2346-04	N	FCC PLATE	1	1	1	1	1	1	1	1	1	1	1	1
B42-2347-08	N	LCD PLATE REV	1	1	1	1	1	1	1	1	1	1	1	1
B42-2349-08	N	KEYBOARD LABEL -,M,+,S,*,#	1	1	1	1	1	1	1	1	1	1	1	1
B43-1020-04	N	BADGE	1	1	1	1	1	1	1	1	1	1	1	1
B43-1027-04	N	BADGE	1	1	1	1	1	1	1	1	1	1	1	1
B43-1020-04	N	BADGE	1	1	1	1	1	1	1	1	1	1	1	1
B46-0410-00	N	WARRANTY CARD	1	1	1	1	1	1	1	1	1	1	1	1
B50-4135-00	N	INSTRUCTION MANUAL	1	1	1	1	1	1	1	1	1	1	1	1
B50-4139-00	N	INSTRUCTION MANUAL	1	1	1	1	1	1	1	1	1	1	1	1
B50-4137-00	N	INSTRUCTION MANUAL	1	1	1	1	1	1	1	1	1	1	1	1
B50-4136-00	N	INSTRUCTION MANUAL	1	1	1	1	1	1	1	1	1	1	1	1
B50-4139-00	N	INSTRUCTION MANUAL	1	1	1	1	1	1	1	1	1	1	1	1
E23-0426-05		TERMINAL	1	1	1	1	1	1	1	1	1	1	1	1
E23-0432-04		TERMINAL FOR JUNCTION	2	2	2	2	2	2	2	2	2	2	2	2
E23-0432-04		TERMINAL FOR JUNCTION	4	4	4	4	4	4	4	4	4	4	4	4
E29-0428-04		CONNECTOR & TERMINAL (OTHERS)	4	4	4	4	4	4	4	4	4	4	4	4
E29-0427-04		CONNECTOR & TERMINAL (OTHERS)	4	4	4	4	4	4	4	4	4	4	4	4
E29-0450-04		CONNECTOR & TERMINAL (OTHERS)	4	4	4	4	4	4	4	4	4	4	4	4
E29-0446-08	N	LCD CONNECTOR	1	1	1	1	1	1	1	1	1	1	1	1
E31-3035-05	N	CONNECTOR WITH WIRE MIC,SP	1	1	1	1	1	1	1	1	1	1	1	1
E31-3031-15	N	CONNECTOR WITH WIRE	1	1	1	1	1	1	1	1	1	1	1	1
FTD1534	N	LCD	1	1	1	1	1	1	1	1	1	1	1	1
F07-0855-04	N	MIC.SP COVER	1	1	1	1	1	1	1	1	1	1	1	1
F07-0856-04	N	TERMINAL COVER(A)	1	1	1	1	1	1	1	1	1	1	1	1
F20-0520-04		CUSHION(B) SP	1	1	1	1	1	1	1	1	1	1	1	1
F20-0521-04		INSULATING PLATE	1	1	1	1	1	1	1	1	1	1	1	1
F29-0425-04	N	INSULATING SHEET(A) TX-RX	1	1	1	1	1	1	1	1	1	1	1	1
F29-0426-04	N	INSULATING SHEET(B)	1	1	1	1	1	1	1	1	1	1	1	1
G02-0505-05		KNOB FITTING SPRING	1	1	1	1	1	1	1	1	1	1	1	1
G10-0629-14	N	SHADOW MASK	1	1	1	1	1	1	1	1	1	1	1	1
G10-0636-04	N*	SHADOW MASK	1	1	1	1	1	1	1	1	1	1	1	1
G13-0626-04	*	CUSHION MIC	1	1	1	1	1	1	1	1	1	1	1	1

PARTS LIST

Part NO.	Re- marks	Description	Q'ty									
G13-0808-04	N*	CUSHION(CASE,KEYBOARD)	1	1	1	1	1	1	1	1	1	1
G13-0635-04	*	CUSHION(UNDER LED)	1	1	1	1	1	1	1	1	1	1
G13-0656-04	*	CUSHION(ABOVE DCL UNIT)	1	1	1	1	1	1	1	1	1	1
G13-0860-04	*	CUSHION(UNDER DCL UNIT)	1	1	1	1	1	1	1	1	1	1
G13-0697-04	N*	CUSHION	1	1	1	1	1	1	1	1	1	1
H01-4564-13	N	CARTON(INSIDE)	1	1	1	1	1	1	1	1	1	1
H01-4565-13	N	CARTON(INSIDE)										
H01-4579-13	N	CARTON(INSIDE)										
H01-4564-13	N	CARTON(INSIDE)	1	1	1	1	1	1	1	1	1	1
H10-2552-12	N	POLYSTYRENE FOAMED FIXTURE	1	1	1	1	1	1	1	1	1	1
H10-2553-22	N	POLYSTYRENE FOAMED FIXTURE	1	1	1	1	1	1	1	1	1	1
H25-0103-04	*	BAG(CHARGER) 125X250	1	1	1	1	1	1	1	1	1	1
H25-0077-03	*	BAG	1	1	1	1	1	1	1	1	1	1
H25-0077-03	*	BAG	1	1	1	1	1	1	1	1	1	1
H25-0029-04	*	BAG(ACS)	1	1	1	1	1	1	1	1	1	1
H25-0120-04	*	BAG	1	1	1	1	1	1	1	1	1	1
J21-2774-14	*	SP MOUNTING HARDWARE	1	1	1	1	1	1	1	1	1	1
J25-3252-05	N	FLEXIBLE PC BOARD(A)	1	1	1	1	1	1	1	1	1	1
J39-0409-14	*	MIC SPACER	1	1	1	1	1	1	1	1	1	1
J69-0308-04	N	HAND STRAP ASS'Y	1	1	1	1	1	1	1	1	1	1
K23-0768-05	N	KNOB(A)(VOLUME)	1	1	1	1	1	1	1	1	1	1
K23-0770-05	N	KNOB(B) (SQ)	1	1	1	1	1	1	1	1	1	1
K27-0470-04	N	PUSH KNOB(A) HI,TONE,REV,	3	3	3	3	3	3	3	3	3	3
K27-0473-04	N	PUSH KNOB(B) DCS,C.AL/R	2	2	2	2	2	2	2	2	2	2
K29-3015-04	N	LAMP KNOB	1	1	1	1	1	1	1	1	1	1
K29-3017-04	N	PIT LEVER	1	1	1	1	1	1	1	1	1	1
N08-0506-14		DRESSED SCREW	2	2	2	2	2	2	2	2	2	2
N09-0690-05	N	FLAT SCREW DCL UNIT 2MMX3	3	3	3	3	3	3	3	3	3	3
N09-0637-05		SCREW (OTHERS)	4	4	4	4	4	4	4	4	4	4
N09-0685-05	N	SCREW CASE(UPPER,BOTTOM)	3	3	3	3	3	3	3	3	3	3
N09-0638-05		SCREW (OTHERS)	2	2	2	2	2	2	2	2	2	2
N14-0526-04		ROUND NUT(VOLUME)	1	1	1	1	1	1	1	1	1	1
N32-2004-41		FLAT HD SCREW	4	4	4	4	4	4	4	4	4	4
N32-2604-41		FLAT HD SCREW	4	4	4	4	4	4	4	4	4	4
N87-2005-41		TAPPING SCREW	1	1	1	1	1	1	1	1	1	1
SLP475B	N	LED	1	1	1	1	1	1	1	1	1	1
SLP575D40	N	LED	1	1	1	1	1	1	1	1	1	1
S59-0420-05	N	KEYBOARD ASS'Y	1	1	1	1	1	1	1	1	1	1
S59-0422-05	N	KEYBOARD ASS'Y	1	1	1	1	1	1	1	1	1	1
S59-0423-05	N	KEYBOARD ASS'Y	1	1	1	1	1	1	1	1	1	1
S59-0422-05	N	KEYBOARD ASS'Y	1	1	1	1	1	1	1	1	1	1
T07-0237-05	N	SPEAKER	1	1	1	1	1	1	1	1	1	1
T18-0054-05		EARPHONE	1	1	1	1	1	1	1	1	1	1
T90-0342-05	N	HELICAL ANTENNA	1	1	1	1	1	1	1	1	1	1
T91-0312-15		ELECTRIC CONDENSER MIC	1	1	1	1	1	1	1	1	1	1
UPD7514G-021-12	N	IC	1	1	1	1	1	1	1	1	1	1
UPD7514G-026-12	N	IC										
UPD7514G-021-12	N	IC	1	1	1	1	1	1	1	1	1	1
UPD7514G-026-12	N	IC										

PARTS LIST

Part NO.	Re- marks	Description	Q'ty						
			010	021	022	023	051	061	071
W09-0337-05	N	NI BATTERY ASS'Y	1	1	1	1	1		1
W09-0345-08	N	NI BATTERY	1	1	1	1	1		1
W09-0326-05		LITHIUM BATTERY	1	1	1	1	1	1	1
W09-0315-05		BATTERY CHARGER(120V)	1	1					
W09-0317-05		BATTERY CHARGER(220V)	1	1					
W09-0319-05		BATTERY CHARGER(240V)					1	1	1
X55-1380-10	N	RX UNIT	1						
X55-1380-22	N	RX UNIT		1					
X55-1380-21	N	RX UNIT					1		
X55-1380-61	N	RX UNIT					1	1	1
X55-1380-71	N	RX UNIT							
X56-1470-10	N	TX UNIT	1	1	1	1			
X56-1470-51	N	TX UNIT					1		
X56-1470-61	N	TX UNIT							
X56-1470-10	N	TX UNIT							
X57-1110-10	N	DCL UNIT	1	1	1	1	1	1	1

PARTS LIST

Part NO.	Re- marks	Description	Q'ty							Ref. NO.
			010	021	022	061	071			
RX UNIT (X55-1380-XX) -10 : K -21 : M3 -22 : M1 -61 : T,W -71 : M2,X										
BA526	N	IC	1	1	1	1	1	Q	8	
BB221	N	VOLTAGE VARIABLE	4	4	4	4	4	D	1, 3, 4, 5	
CC73FCH1H150J		CHIP CAP. 15P 50V	1	1	1	1	1	C	33	
CC73FCH1H330J		CHIP CAP. 33P 50V	1	1	1	1	1	C	24	
CC73FCH1H05C		CHIP CAP. 0.5P 50V	1	1	1	1	1	C	11	
CC73FCH1H010C		CHIP CAP. 1P 50V	1	1	1	1	1	C	10	
CC73FSL1H390J		CHIP CAP. 39P 50V	1	1	1	1	1	C	37	
CC73FCH1H020C		CHIP CAP. 2P 50V	3	3	3	3	3	C	2, 8, 12	
CC73FSL1H470J		CHIP CAP. 47P 50V	1	1	1	1	1	C	62	
CC73FCH1H040D		CHIP CAP. 6P 50V	1	1	1	1	1	C	17	
CC73FSL1H101J		CHIP CAP. 100P 50V	1	1	1	1	1	C	4	
CC73FCH1H080D		CHIP CAP. 8P 50V	4	4	4	4	4	C	3, 9, 13, 15	
CC73FCH1H080D		CHIP CAP. 8P 50V	1	1	1	1	1	C	3, 3, 13, 15	
CC73FSL1H151J		CHIP CAP. 150P 50V	1	1	1	1	1	C	25	
CC73FCH1H120J		CHIP CAP. 12P 50V	1	1	1	1	1	C	28	
CE04CWOJ100M		ELECTRO 10 6.3V	5	5	5	5	5	C	46, 48, 57, 58, 72	
CE04CM1HOR1M		ELECTRO 0.1 50V	5	5	5	5	5	C	27, 40, 54, 66, 74	
CE04CM1HOR1M		ELECTRO 0.1 50V				4		C	27, 40, 54, 74	
CE04CWOJ220M		ELECTRO 22 6.3V	3	3	3	3	3	C	71, 73, 86	
CE04CM1HR47M		ELECTRO 0.47 50V	1	1	1	1	1	C	71, 73	
CE04CM1H010M		ELECTRO 1 50V	2	2	2	2	2	C	34	
CE04CWOJ470M		ELECTRO 47 6.3V	3	3	3	3	3	C	53, 67	
CE04CM1A330M		ELECTRO 33 10V				2		C	71, 77, 80	
CE04CM1C47M		ELECTRO 4.7 16V	3	3	3	3	3	C	70, 77	
CE04CM1C470M		ELECTRO 47 16V	1	1	1	1	1	C	55, 60, 76	
CE04CM1V2R2M		ELECTRO 2.2 35V	2	2	2	2	2	C	45	
CK45B1M102K		CERAMIC 1000P 50V	1	1	1	1	1	C	29, 35	
CK73FB1E103K		CHIP CAP. 0.01 25V	11	11	11	11	11	C	6	
CK73FB1H471K		CHIP CAP. 470P 50V	3	3	3	3	3	C	21, 22, 23, 30, 31, 32, 36	
CK73FB1H102K		CHIP CAP. 1000P 50V	14	14	14	14	14	C	49, 50, 51, 52	
CK73FB1H102K		CHIP CAP. 1000P 50V				10		C	20, 78, 90	
CK73FB1H332K		CHIP CAP. 3300P 50V	1	1	1	1	1	C	41	
CK73FB1H472K		CHIP CAP. 4700P 50V	5	5	5	5	5	C	7, 16, 18, 19, 85	
CK73FB1H222K		CHIP CAP. 2200P 50V	2	2	2			C	87, 88	
CK73FB1H222K		CHIP CAP. 2200P 50V	1	1	1	1	1	C	42	
CG92M1H563K		MYLAR 0.056 50V	1	1	1	1	1	C	69	
CS15E1E010M		TANTALUM 1 25V	1	1	1	1	1	C	64	
CS15E1A100M		TANTALUM 10 10V	1	1	1	1	1	C	59	
C90-0842-05		ELECTRO 100 6.3V	1	1	1	1	1	C	14	
C91-0498-05		CERAMIC 0.35P	2	2	2	2	2	C	43, 56	
C91-0430-05		LAYER CAP. 0.047	1	1	1	1	1	C	26	
C91-1020-05	N	LAYER CAP. 0.1	1	1	1	1	1	C	47	
C91-0769-05		CERAMIC 0.01	1	1	1	1	1	C	68	
C91-0749-05		CERAMIC 220P	1	1	1	1	1	C	91	
C91-0745-05		CERAMIC 100P	1	1	1	1	1	C		
DT124ES		DIGITAL TR	5	5	5	5	5	Q	9, 14, 18, 29, 30	
DT143TS	N	DIGITAL TR	2	2	2	2	2	Q	10, 13	
D32-0405-05		STOPPER	1	1	1	1	1			
E23-0512-05		TERMINAL	2	2	2	2	2			

PARTS LIST

Part NO.	Re- marks	Description	Qty							Ref. NO.
			010	021	022	061	071			
E23-0431-14		TERMINAL (INSIDE)	2	2	2	2	2			
E23-0432-04		TERMINAL FOR JUNCTION	1	1	1	1	1			
F10-1318-04	N*	SHIELDING PLATE	1	1	1	1	1			
F20-0541-04	N*	INSULATING BOARD	1	1	1	1	1			
G01-0814-04		COILED SPRING	1	1	1	1	1			
J09-0403-24	*	TERMINAL STAND	1	1	1	1	1			
J39-0410-04	*	SPACER FOR TERMINAL	2	2	2	2	2			
LVC517	N	IC	1	1	1	1	1		Q , 35	
L33-0632-05	N	CHOKE COIL	1	1	1	1	1		L , 2	
L34-2215-05	N	TUNING COIL 146MHZ	1	1	1	1	1		T , 1	
L34-2216-05	N	TUNING COIL 146MHZ	3	3	3	3	3		T , 2, 3, 4	
L34-2222-05	N	TUNING COIL 10.7MHZ	1	1	1	1	1		T , 5	
L34-2217-05	N	TUNING COIL 455KHZ	1	1	1	1	1		T , 6	
L40-2211-14		INDUCTOR 220 UH	1	1	1	1	1		L , 1	
L71-0328-05		CRYSTAL FILTER 10.7MHZ	1	1	1	1	1		F , 1	
L72-0335-05		CERAMIC FILTER CFU-455E	1	1	1	1	1		F , 2	
L77-0946-05		XTAL 10.245MHZ	1	1	1	1	1		X , 1	
L78-0102-05		RESONATOR (OTHERS)	1	1	1	1	1		X , 2	
MC3357P		IC	1	1	1	1	1		Q , 6	
MTZ8.2JA		ZENER DIODE 8.2V	1	1	1	1	1		D , 8	
MTZ4.7JC		ZENER DIODE 4.7V	1	1	1	1	1		D , 11	
N30-2008-41		PAN HD SCREW	1	1	1	1	1			
N30-2604-41		PAN HD SCREW	2	2	2	2	2			
N30-2005-41		PAN HD SCREW	1	1	1	1	1			
N35-2004-41		BIND SCREW	2	2	2	2	2			
R014B82C101J		RES. CARBON 100 OHM 1/6W	1	1	1	1	1		R , 76	
R014B82C103J		RES. CARBON 10K OHM 1/6W	2	2	2	2	2		R , 60, 92	
R014B82C223J		RES. CARBON 22K OHM 1/6W	1	1	1	1	1		R , 75	
R014B82C104J		RES. CARBON 100KOHM 1/6W	1	1	1	2			R , 200,201	
R014C82C473J		RES. CARBON 47K OHM 1/6W	1	1	1	1	1		R , 25	
R014C82C104J		RES. CARBON 100KOHM 1/6W	1	1	1	2			R , 202,203	
R014C82C2R2J		RES. CARBON 2.2 OHM 1/6W	1	1	1	1	1		R , 72	
R014C82C220J		RES. CARBON 22 OHM 1/6W	1	1	1	1	1		R , 51	
R073FB2A2R2K		CHIP RES. 2.2 OHM 1/10W	1	1	1	1	1		R , 28	
R073FB2A560J		CHIP RES. 56 OHM 1/10W	1	1	1	1	1		R , 12	
R073FB2A272J		CHIP RES. 2.7KOHM 1/10W	4	4	4	3	4		R , 14, 18, 78, 88	
R073FB2A272J		CHIP RES. 2.7KOHM 1/10W	4	4	4	3			R , 14, 18, 78	
R073FB2A333J		CHIP RES. 33K OHM 1/10W	8	8	8	8	8		R , 46, 47, 65, 71, 81, 82, 83	
R073FB2A154J		CHIP RES. 150KOHM 1/10W	1	1	1	1	1		R , 58	
R073FB2A101J		CHIP RES. 100 OHM 1/10W	3	3	3	3	3		R , 7, 13, 40	
R073FB2A184J		CHIP RES. 180KOHM 1/10W	1	1	1	1	1		R , 37	
R073FB2A332J		CHIP RES. 3.3KOHM 1/10W	1	1	1	1	1		R , 66	
R073FB2A151J		CHIP RES. 150 OHM 1/10W	1	1	1	1	1		R , 5	
R073FB2A472J		CHIP RES. 4.7KOHM 1/10W	6	6	6	6	6		R , 38, 54, 56, 68, 79, 91	
R073FB2A472J		CHIP RES. 4.7KOHM 1/10W	2	2	2	2	2		R , 38, 54, 56, 68, 79	
R073FB2A224J		CHIP RES. 220KOHM 1/10W	2	2	2	2	2		R , 19, 55	
R073FB2A181J		CHIP RES. 180 OHM 1/10W	2	2	2	2	2		R , 42, 80	
R073FB2A181J		CHIP RES. 180 OHM 1/10W	2	2	2	1	2		R , 42	
R073FB2A334J		CHIP RES. 330KOHM 1/10W	2	2	2	2	2		R , 17, 32	

PARTS LIST

Part NO.	Re- marks	Description	Qty							Ref. NO.
			010	021	022	061	071			
R073FB2A473J		CHIP RES. 47K OHM 1/10W	9	9	9	9	9	R	27, 29, 49, 50, 57, 59, 61 86, 90	
R073FB2A582J		CHIP RES. 5.6KOHM 1/10W	2	2	2	2	2	R	31, 34	
R073FB2A471J		CHIP RES. 470 OHM 1/10W	5	5	5	5	5	R	4, 39, 44, 45, 74	
R073FB2A682J		CHIP RES. 6.8KOHM 1/10W	1	1	1	1	1	R	62	
R073FB2A822J		CHIP RES. 8.2KOHM 1/10W	1	1	1	1	1	R	6	
R073FB2A683J		CHIP RES. 68K OHM 1/10W	1	1	1	1	1	R	85	
R073FB2A683J		CHIP RES. 68K OHM 1/10W					1	R	0	
R073FB2A103J		CHIP RES. 10K OHM 1/10W	4	4	4	4	4	R	21, 30, 67, 73	
R073FB2A102J		CHIP RES. 1K OHM 1/10W	6	6	6	6	6	R	15, 33, 52, 53, 63, 64	
R073FB2A823J		CHIP RES. 82K OHM 1/10W	1	1	1	1	1	R	70	
R073FB2A123J		CHIP RES. 12K OHM 1/10W	1	1	1	1	1	R	48	
R073FB2A104J		CHIP RES. 100KOHM 1/10W	8	8	8	8	8	R	1, 2, 8, 9, 10, 16, 36	
								R	77	
R073FB2A122J		CHIP RES. 1.2KOHM 1/10W	1	1	1	1	1	R	43	
R073FB2A152J		CHIP RES. 1.5KOHM 1/10W	3	3	3	3	3	R	23, 24, 69	
R073FB2A153J		CHIP RES. 15K OHM 1/10W	1	1	1	1	1	R	89	
R073FB2A223J		CHIP RES. 22K OHM 1/10W	5	5	5	5	5	R	20, 22, 26, 35, 87	
R073FB2A222J		CHIP RES. 2.2KOHM 1/10W	3	3	3	3	3	R	3, 11, 41	
R12-1431-05	N	TRIM.POT. 1K	1	1	1	1	1	VR	5	
R12-3447-05	N	TRIM.POT. 10K	1	1	1	1	1	VR	4	
R12-4414-05	N	TRIM.POT. 50K	2	2	2	2	2	VR	1, 3	
R23-3401-05	N	POTENTIOMETER AF,Sq	1	1	1	1	1	VR	2	
R92-0670-05		CHIP RES. 0 OHM	5	5	5	5	5			
R92-0150-05		JUMPER WIRE	5	5	5	5	5			
R92-0150-05		JUMPER WIRE				4				
S31-1414-05	N	SLIDE SWITCH HI - LO	2	2	2	2	2	S	1, 2	
S40-1404-15		PUSH SW LOCK	2	1	1	1	1	S	3, 6	
S40-1404-15		PUSH SW LOCK						S	3	
S40-1403-15		PUSH SW NON LOCK	1					S	4	
S40-1403-15		PUSH SW NON LOCK			2	2	2	S	4, 6	
S50-1415-05		TACT SW LAMP	1	1	1	1	1	S	7	
S50-1424-05	N	TACT SW PTT	1	1	1	1	1	S	8	
TCM5087N		IC	1	1	1	1	1	Q	33	
1N60A		DIODE	6	6	6	6	6	D	6, 7, 21, 22, 23, 24	
1SS106		DIODE	3	3	3	3	3	D	14, 15	
1SS133		DIODE	14	14				D	16, 17, 18, 19, 25, 26, 27	
1SS133		DIODE	12					D	28, 29, 30, 31, 32, 33, 36	
1SS133		DIODE						D	16, 17, 18, 19, 25, 26, 27	
1SS133		DIODE						D	28, 29, 30, 31, 36	
1SS133		DIODE						D	16, 17, 18, 19, 25, 26, 27	
1SS133		DIODE						D	28, 31, 35, 36	
1SS133		DIODE						D	16, 17, 18, 19, 25, 26, 27	
1SS133		DIODE						D	28, 29, 30, 31, 33, 35, 36	
1S1555		DIODE	2	2	2	2	2	D	2, 9, 10	
2SA1115(E)		TR	7	7	7	6	7	Q	20, 22, 24, 25, 26, 27, 32	
2SA1115(E)		TR						Q	20, 22, 24, 25, 26, 27	
2SB69B		TR	2	2	2	2	2	Q	17, 21	
2SC2668(Y)		TR	3	3	3	3	3	Q	2, 4, 5	
2SC2671(H)		TR	1	1	1	1	1	Q	1	
2SC2603(E)		TR	10	10	10	10	10	Q	7, 11, 12, 15, 16, 19, 23	
									28, 31, 34	

PARTS LIST

Part NO.	Remarks	Description	Q'ty							Ref. NO.
			010	021	022	061	071			
2SC2603(E)		TR				8		Q , 7, 11, 12, 15, 16, 23, 28		
2SK192A(Y)*J		FET	1	1	1	1	1	Q , 34		
								Q , 3		

PARTS LIST

Part NO.	Description	Q'ty			Ref. NO.
010 051 061					
TX UNIT (X56-1470-XX) -10 : K,M1,M2,M3,X -51 : T -61 : W-					
B9221	VOLTAGE VARIABLE	1	1	1	D , 1
CC45CH1H050C	CERAMIC 5P 50V	1 <td>1<td>1</td><td>C , 50</td></td>	1 <td>1</td> <td>C , 50</td>	1	C , 50
CC45SL1H390J	CERAMIC 39P 50V	1 <td>1<td>1</td><td>C , 41</td></td>	1 <td>1</td> <td>C , 41</td>	1	C , 41
CC73FCH1H100D	CHIP CAP. 10P 50V	3	3	3	C , 27, 78, 79
CC73FSL1H470J	CHIP CAP. 47P 50V	2	2	2	C , 40, 85
CC73FCH1H150J	CHIP CAP. 15P 50V	3	3	3	C , 23, 32, 38
CC73FSL1H560J	CHIP CAP. 56P 50V	1 <td>1<td>1</td><td>C , 24</td></td>	1 <td>1</td> <td>C , 24</td>	1	C , 24
CC73FSL1H680J	CHIP CAP. 68P 50V	1 <td>1<td>1</td><td>C , 17</td></td>	1 <td>1</td> <td>C , 17</td>	1	C , 17
CC73FCH1H220J	CHIP CAP. 22P 50V	4	4	4	C , 26, 34, 73, 82
CC73FSL1H101J	CHIP CAP. 100P 50V	6	6	6	C , 12, 36, 95, 96, 100, 108
CC73FCH1H270J	CHIP CAP. 27P 50V	2	2	2	C , 39, 92
CC73FCH1H330J	CHIP CAP. 33P 50V	1 <td>1<td>1</td><td>C , 91</td></td>	1 <td>1</td> <td>C , 91</td>	1	C , 91
CC73FRH1H060D	CHIP CAP. 6P 50V	1 <td>1<td>1</td><td>C , 10</td></td>	1 <td>1</td> <td>C , 10</td>	1	C , 10
CC73FSL1H151J	CHIP CAP. 150P 50V	1			C , 104
CC73FSL1H820J	CHIP CAP. 82P 50V		1	1	C , 104
CC73FRH1H070D	CHIP CAP. 7P 50V	2	2	2	C , 70
CC73FRH1H100D	CHIP CAP. 10P 50V	1 <td>1<td>1</td><td>C , 4, 71</td></td>	1 <td>1</td> <td>C , 4, 71</td>	1	C , 4, 71
CC73FRH1H220J	CHIP CAP. 22P 50V	2	2	2	C , 74, 77
CC73FCH1H0R5C	CHIP CAP. 0.5P 50V	1 <td>1<td>1</td><td>C , 48</td></td>	1 <td>1</td> <td>C , 48</td>	1	C , 48
CC73FCH1H020C	CHIP CAP. 2P 50V	1 <td>1<td>1</td><td>C , 57</td></td>	1 <td>1</td> <td>C , 57</td>	1	C , 57
CC73FUJ1H390J	CHIP CAP. 99P 50V	1 <td>1<td>1</td><td>C , 49</td></td>	1 <td>1</td> <td>C , 49</td>	1	C , 49
CC73FCH1H030C	CHIP CAP. 3P 50V	2	2	2	C , 6, 76
CC73FCH1H560J	CHIP CAP. 56P 50V	1 <td>1<td>1</td><td>C , 46</td></td>	1 <td>1</td> <td>C , 46</td>	1	C , 46
CC73FCH1H040C	CHIP CAP. 4P 50V	2	2	2	C , 16, 72
CE04CW0J100M	ELECTRO 10 6.3V	3			C , 45, 103, 121
CE04CW0J100M	ELECTRO 10 6.3V		5		C , 45, 103, 111, 119, 121
CE04CW0J100M	ELECTRO 10 6.3V		4		C , 45, 103, 119, 121
CE04CW0J220M	ELECTRO 22 6.3V	1 <td>1<td>1</td><td>C , 56</td></td>	1 <td>1</td> <td>C , 56</td>	1	C , 56
CE04CW1A330M	ELECTRO 33 10V	1 <td>1<td>1</td><td>C , 89</td></td>	1 <td>1</td> <td>C , 89</td>	1	C , 89
CE04CW1C47M	ELECTRO 4.7 16V	1 <td>1<td>1</td><td>C , 44</td></td>	1 <td>1</td> <td>C , 44</td>	1	C , 44
CE04CW1V2R2M	ELECTRO 2.2 35V	1 <td>1<td>1</td><td>C , 86</td></td>	1 <td>1</td> <td>C , 86</td>	1	C , 86
CE04CW1HR47M	ELECTRO 0.47 50V	1			C , 102
CE04CW1HR47M	ELECTRO 0.47 50V		2	2	C , 102, 114
CE04CW1H010M	ELECTRO 1 50V	2	2	2	C , 30, 64
CK45B1H102K	CERAMIC 1000P 50V	1 <td>1<td>1</td><td>C , 55</td></td>	1 <td>1</td> <td>C , 55</td>	1	C , 55
CK73FB1H102K	CHIP CAP. 1000P 50V	35	35	35	C , 1, 2, 3, 5, 7, 9, 11
					14, 15, 19, 20, 21, 22, 25
					28, 31, 35, 42, 47, 58
					60, 61, 62, 65, 68, 69, 75
					80, 81, 90, 100, 106, 107, 109
					110
CK73FB1H102K	CHIP CAP. 1000P 50V				C , 83, 84, 87, 90
CK73FB1H471K	CHIP CAP. 470P 50V	4	4	4	C , 105
CK73FB1H272K	CHIP CAP. 2700P 50V	6	6	6	C , 13, 43, 63, 66, 67, 120
CK73FB1H472K	CHIP CAP. 4700P 50V				C , 29, 88
CK73FF1E223I	CHIP CAP. 0.01 25V	2	2	2	C , 101
C092M1H272K	MYLAR 2700P 50V	1 <td>1<td>1</td><td>C , 118</td></td>	1 <td>1</td> <td>C , 118</td>	1	C , 118
C092M1H392K	MYLAR 3900P 50V	1 <td>1<td>1</td><td>C , 118</td></td>	1 <td>1</td> <td>C , 118</td>	1	C , 118
C092M1H103K	MYLAR 0.01 50V		2	2	C , 115, 116
C092M1H153K	MYLAR 0.015 50V	2	2	2	C , 93, 94
C092M1H333K	MYLAR 0.033 50V		1	1	C , 117
CS15E1VR22M	TANTALUM 0.22 35V	1 <td>1<td>1</td><td>C , 97</td></td>	1 <td>1</td> <td>C , 97</td>	1	C , 97
C05-0067-05	TRIMMER 25P	2	2	2	TC , 1, 3
C05-0309-05	TRIMMER 40P	1 <td>1<td>1</td><td>TC , 2</td></td>	1 <td>1</td> <td>TC , 2</td>	1	TC , 2
C05-0318-05	TRIMMER 6PF	2	2	2	TC , 5, 6
C05-0320-05	TRIMMER 30P	1 <td>1<td>1</td><td>TC , 4</td></td>	1 <td>1</td> <td>TC , 4</td>	1	TC , 4
C91-0721-05	CERAMIC 10P	1 <td>1<td>1</td><td>C , 8</td></td>	1 <td>1</td> <td>C , 8</td>	1	C , 8

PARTS LIST

Part NO.	Re- marks	Description	Q'ty 010 051 061	Ref. NO.
DTA114E(S)		DIGITAL TR	1	Q , 22
DTA144E(S)	N		2 2 2	Q , 20, 21
DTC144E(S)	N	DIGITAL TR	2 2 2	Q , 7, 16
E04-0160-05	N	BNC RECEPTACLE	1 1 1	
E11-0407-05	N	EARPHONE JACK	1 1 1	
E11-0419-05	N	MIC JACK	1 1 1	
E31-3089-15	N	CONNECTOR	1 1 1	
E40-3007-05	*	MINICONNECTOR 2P	1 1 1	
E40-5018-05	*	MINICONNECTOR 4P	1 1 1	
F10-1319-04	N*	SHIELDING PLATE TX	1 1 1	
F10-1320-04	N*	SHIELDING PLATE VCO	1 1 1	
F11-0868-04	N*	SHIELDING COVER VCO	1 1 1	
F11-0869-04	N*	SHIELDING CASE VCO	1 1 1	
F20-0542-04	N*	INSULATING SHEET VCO	1 1 1	
F20-0543-04	N*	INSULATING SHEET TX	1 1 1	
F20-0544-04	N*	INSULATING SHEET FRAME	1 1 1	
J31-0524-04	N*	COLLAR	2	
J31-0527-04	N*	COLLAR	1 1 1	
LA6458S	N	IC	1 1 1	IC , 2
L32-0671-05	N	OSCILLATING COIL	1 1 1	L , 16
L34-0892-05		COIL	1 1 1	L , 11
L34-0893-05		COIL	2 2 2	L , 9, 13
L34-0894-05		COIL	2 2 2	L , 8, 12
L34-0895-05		COIL	2 2 2	L , 4, 7
L34-1061-05		COIL	1 1 1	L , 5
L34-1098-05	N	COIL	1 1 1	L , 14
L34-2218-05	N	TUNING COIL	2 2 2	L , 1, 3
L34-2219-05	N	TUNING COIL	1 1 1	L , 2
L34-2220-05	N	TUNING COIL	2 2 2	L , 21, 22
L34-2221-05	N	VXO COIL	2 2 2	L , 19, 20
L40-1092-17	N	INDUCTOR	5 5 5	L , 6, 10, 18, 24, 25
L40-1892-17	N	INDUCTOR	1 1 1	L , 17
L40-3391-17	N	INDUCTOR	1 1 1	L , 23
L77-0947-05		CRYSTAL	1 1 1	X , 2
L77-0948-05		CRYSTAL	1 1 1	X , 1
L77-1230-05		CRYSTAL	1 1 1	X , 3
MA856		DIODE	8 8 8	D , 2, 4, 8, 11, 12, 13, 14
MC145155P*J		IC	1 1 1	IC , 16
MC921		DIODE	1 1 1	IC , 1
MI301		DIODE	1 1 1	D , 15
NE555P		IC	1 1 1	D , 3
RD14CB2C470J		RES. CARBON	1 1 1	IC , 3
RD14CB2C151J		RES. CARBON	1 1 1	R , 36
RD14CB2C212J		RES. CARBON	1 1 1	R , 13
RD14CB2C123J		RES. CARBON	1 1 1	R , 35
RD14CB2C223J		RES. CARBON	2 2 2	R , 83, 85
RD14CB2C473J		RES. CARBON	1 1 1	R , 31
RD14CB2C683J		RES. CARBON	1 1 1	R , 84

PARTS LIST

Part NO.	Re- marks	Description	Q'ty 010 051 061	Ref. NO.
RD14CB2C104J		RES. CARBON	1 1 1	R , 34
RD14CB2C274J		RES. CARBON	1 1 1	R , 82
RD14BB2C470J		RES. CARBON	1 1 1	R , 10
RD14BB2C560J		RES. CARBON	1 1 1	R , 19
RD14BB2C152J		RES. CARBON	1 1 1	R , 61
RD14BB2C472J		RES. CARBON	1 1 1	R , 86
RD14CB2C472J		RES. CARBON	1	R , 86
RD14BB2C333J		RES. CARBON	1	R , 88
RD14CB2C333J		RES. CARBON	1 1 1	R , 88
RD14BB2C104J		RES. CARBON	1 1 1	R , 65
RD73FB2A2R2K		CHIP RES.	1 1 1	R , 21
RD73FB2A102J		CHIP RES.	2 2 2	R , 4, 7
RD73FB2A333J		CHIP RES.	1 1 1	R , 27
RD73FB2A334J		CHIP RES.	1 1 1	R , 76
RD73FB2A122J		CHIP RES.	1 1 1	R , 53
RD73FB2A393J		CHIP RES.	1 1 1	R , 9
RD73FB2A473J		CHIP RES.	6 6 6	R , 28, 46, 47, 60, 68, 79
RD73FB2A474J		CHIP RES.	2 2 2	R , 41, 55
RD73FB2A220J		CHIP RES.	1 1 1	R , 22
RD73FB2A222J		CHIP RES.	4 4 4	R , 8, 12, 40, 91
RD73FB2A270J		CHIP RES.	1 1 1	R , 17
RD73FB2A564J		CHIP RES.	1 1 1	R , 33
RD73FB2A470J		CHIP RES.	2 2 2	R , 14, 15
RD73FB2A332J		CHIP RES.	2 2 2	R , 39, 62
RD73FB2A824J		CHIP RES.	1 1 1	R , 6
RD73FB2A392J		CHIP RES.	1 1 1	R , 66
RD73FB2A823J		CHIP RES.	2 2 2	R , 77, 78
RD73FB2A472J		CHIP RES.	2 2 2	R , 56, 57
RD73FB2A101J		CHIP RES.	3 3 3	R , 11, 18, 20
RD73FB2A101J		CHIP RES.	100 OHM 1/10W	R , 11, 18, 20
RD73FB2A104J		CHIP RES.	100 OHM 1/10W	R , 29, 32, 37
RD73FB2A822J		CHIP RES.	8.2K OHM 1/10W	R , 26, 42
RD73FB2A181J		CHIP RES.	180 OHM 1/10W	R , 59
RD73FB2A103J		CHIP RES.	10K OHM 1/10W	R , 3, 16, 25, 30, 44, 48, 49
RD73FB2A271J		CHIP RES.	270 OHM 1/10W	R , 50, 51, 52, 63, 71
RD73FB2A124J		CHIP CAP.	2	R , 72, 80
RD73FB2A124J		CHIP CAP.	120K OHM 1/10W	R , 69, 73
RD73FB2A331J		CHIP RES.	330 OHM 1/10W	R , 69
RD73FB2A154J		CHIP RES.	150K OHM 1/10W	R , 24
RD73FB2A184J		CHIP RES.	180K OHM 1/10W	R , 5, 58, 74
RD73FB2A471J		CHIP RES.	470 OHM 1/10W	R , 70, 89
RD73FB2A224J		CHIP RES.	220K OHM 1/10W	R , 54, 64
RD73FB2A123J		CHIP RES.	12K OHM 1/10W	R , 38, 75
RD73FB2A153J		CHIP RES.	15K OHM 1/10W	R , 67
RD73FB2A274J		CHIP RES.	270K OHM 1/10W	R , 90
RD73FB2A23J		CHIP RES.	22K OHM 1/10W	R , 1, 43
RN14BK2B9102F		METAL FILM	91K 1/8W	R , 45
R12-3447-05		TRIM.POT.	10K	R , 87
R12-3448-05		TRIM.POT.	20K	VR , 1
R12-4414-05		TRIM.POT.	50K	VR , 3
R92-0670-05		CHIP RES.	0 OHM	VR , 2
S40-1403-15		PUSH SW	NON LOCK	S , 2
S40-1404-15		PUSH SW	LOCK	S , 1, 2
S40-1404-15		PUSH SW	LOCK	S , 1
S59-1405-05		TACT SW	RESET	S , 3

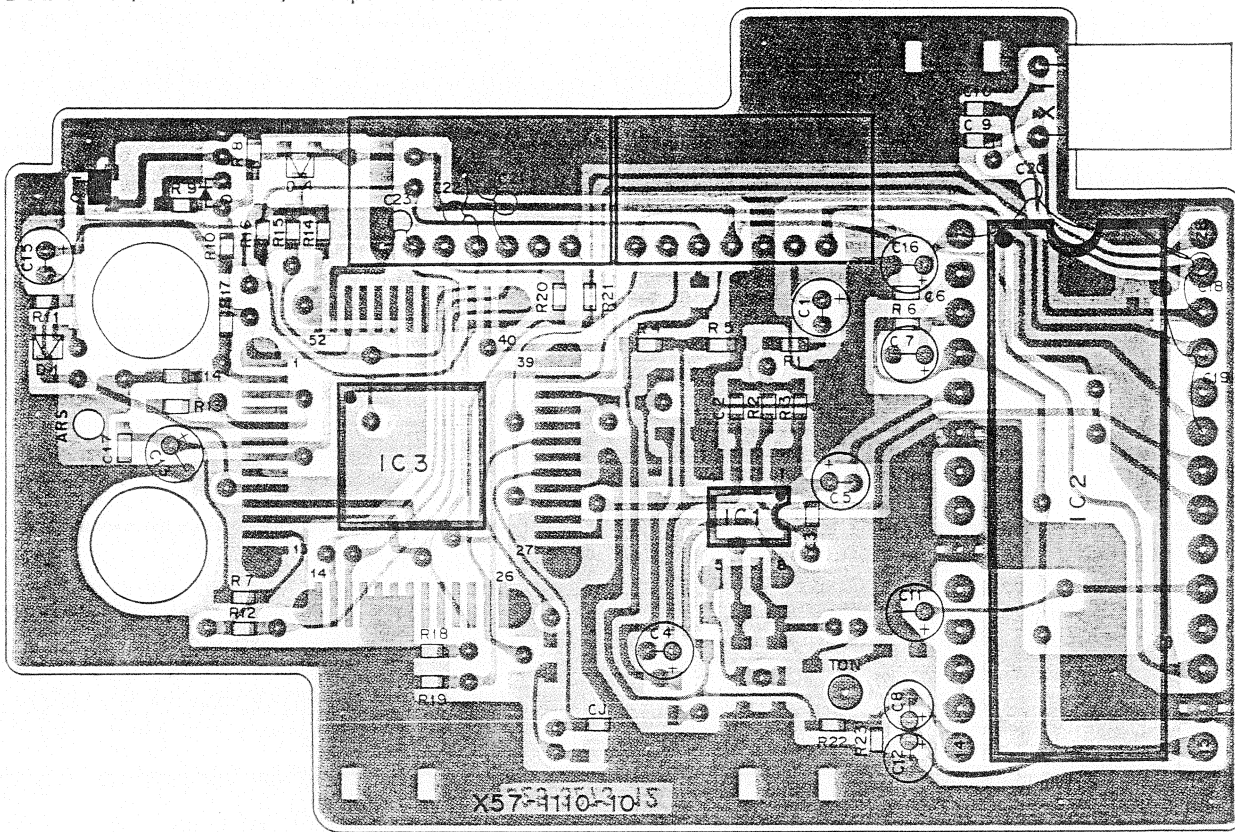
PARTS LIST

Part NO.	Re- marks	Description	Q'ty 010 051 061	Ref. NO.
1SS106		DIODE	1	D , 18
1SS133		DIODE	5 5 5	D , 5, 6, 7, 9, 17
1SV123		DIODE	1 1 1	D , 10
2SA1115(E)		TR	3 3 3	Q , 9, 17, 19
2SC1947		TR	1 1 1	Q , 6
2SC2053		TR	1 1 1	Q , 5
2SC2347		TR	2 2 2	Q , 4, 13
2SC2603(E)		TR	3 3 3	Q , 8, 18, 23
2SC2668(Y)		TR	6 6 6	Q , 1, 2, 3, 11, 12, 14
2SC2669(Y)		TR	1 1 1	Q , 15
2SK192A(Y)*J		FET	1 1 1	Q , 10

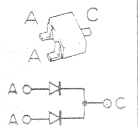
PARTS LIST

Part NO.	Re- marks	Description	Q'ty 010	Ref. NO.
DCL UNIT (X57-1110-10)				
CC73FSL1H820J		CHIP CAP. 82P 50V	1	C , 3
CC73FCH1H150J		CHIP CAP. 15P 50V	2	C , 9, 10
CC73FCH1H330J		CHIP CAP. 33P 50V	1	C , 14
CE04CW1HORIM		ELECTRO 0.1 50V	2	C , 8, 11
CE04CW1HO10M		ELECTRO 1 50V	3	C , 1, 5, 15
CE04CW0J100M		ELECTRO 10 6.3V	4	C , 4, 7, 12, 16
CE04CW0J470M		ELECTRO 47 6.3V	1	C , 13
CK45B1H102K		CERAMIC 1000P 50V	6	C , 18, 19, 20, 21, 22, 0, 0
CK73FB1H222K		CHIP CAP. 2200P 50V	1	C , 0, 0, 0, 23
CK73FB1E103K		CHIP CAP. 0.01 25V	2	C , 2
E40-3107-05	N*	MINI CONNECTOR 7P	1	C , 6, 17
L77-1206-05		XTAL 3.6864MHZ	1	X , 1
MA151WK	N	CHIP DIODE	2	D , 1, 4
MA522(Q)		DIODE	1	D , 3
MN6127A		IC	1	IC , 2
NJM4558M	N	IC	1	IC , 1
RD73FB2A563J		CHIP RES. 56K OHM 1/10W	1	R , 1
RD73FB2A823J		CHIP RES. 82K OHM 1/10W	1	R , 13
RD73FB2A104J		CHIP RES. 100KOHM 1/10W	2	R , 6, 8
RD73FB2A244J		CHIP RES. 220KOHM 1/10W	1	R , 11
RD73FB2A394J		CHIP RES. 390KOHM 1/10W	2	R , 3, 23
RD73FB2A334J		CHIP RES. 330KOHM 1/10W	1	R , 22
RD73FB2A102J		CHIP RES. 1K OHM 1/10W	1	R , 12
RD73FB2A822J		CHIP RES. 8.2KOHM 1/10W	1	R , 9
RD73FB2A472J		CHIP RES. 4.7KOHM 1/10W	2	R , 20, 21
RD73FB2A103J		CHIP RES. 10K OHM 1/10W	2	R , 7, 10
RD73FB2A273J		CHIP RES. 27K OHM 1/10W	2	R , 4, 17
RD73FB2A333J		CHIP RES. 33K OHM 1/10W	1	R , 5
RD73FB2A473J		CHIP RES. 47K OHM 1/10W	4	R , 2, 14, 15, 16
R92-0670-05		CHIP RES. 0 OHM	2	
UPD7507G-575-00		MICRO-PROCESSOR FOR DCS	1	IC , 3
2SC2712(Y)		CHIP TR.	1	Q , 1

DCL UNIT (X57-1110-10) Component side view



MA151WK

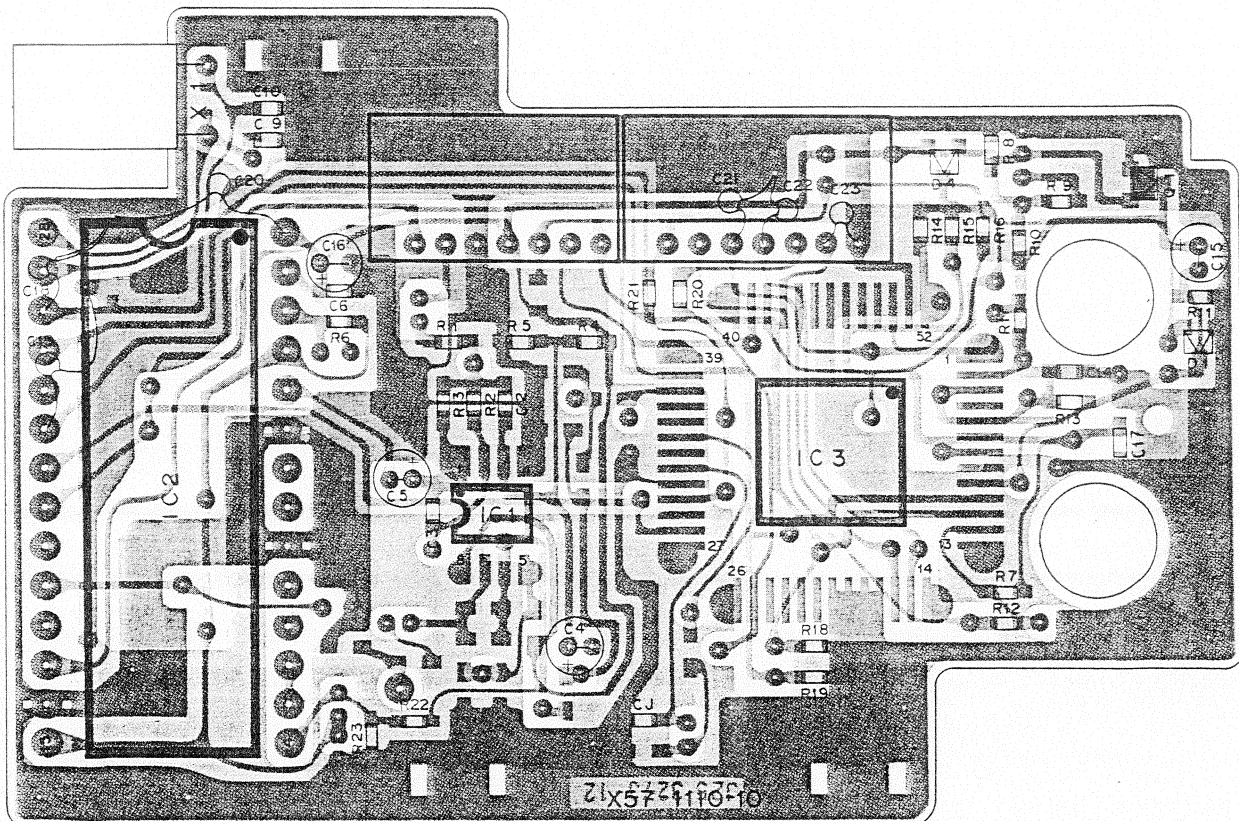


Q1 : 2SC2712(Y) IC1 : NJM4558M IC2 : MN6127A IC3 : μ PD7507G-575-00 D1,4 : MA151WK D3 : MA522(Q)

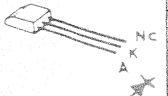
2SC2712



DCL UNIT (X57-1110-10) Foil side view

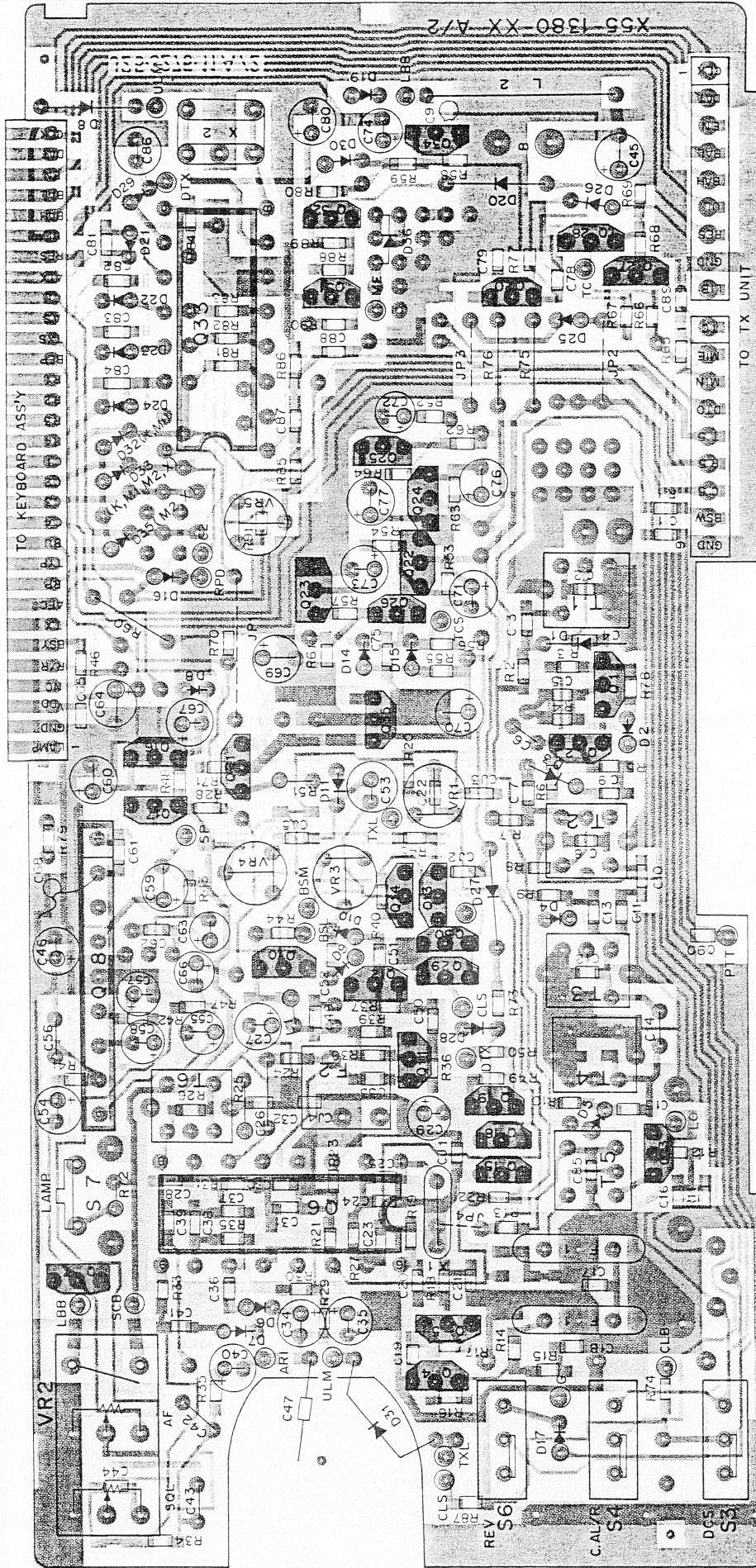


MA522

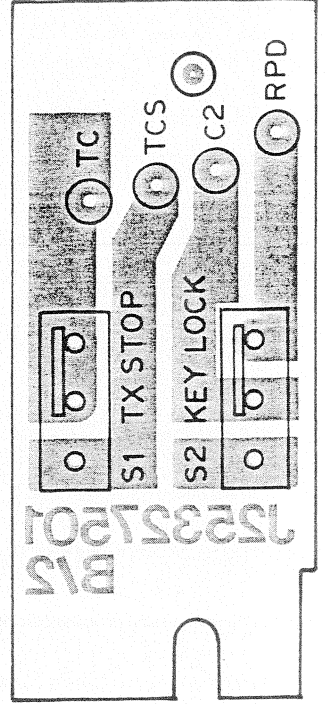


TR-2600A/E PC BOARD VIEW

RX UNIT (X55-1380-XX) (A/2) (-10 : K, -21 : M3, -22 : M1, -71 : M2, X) Component side view

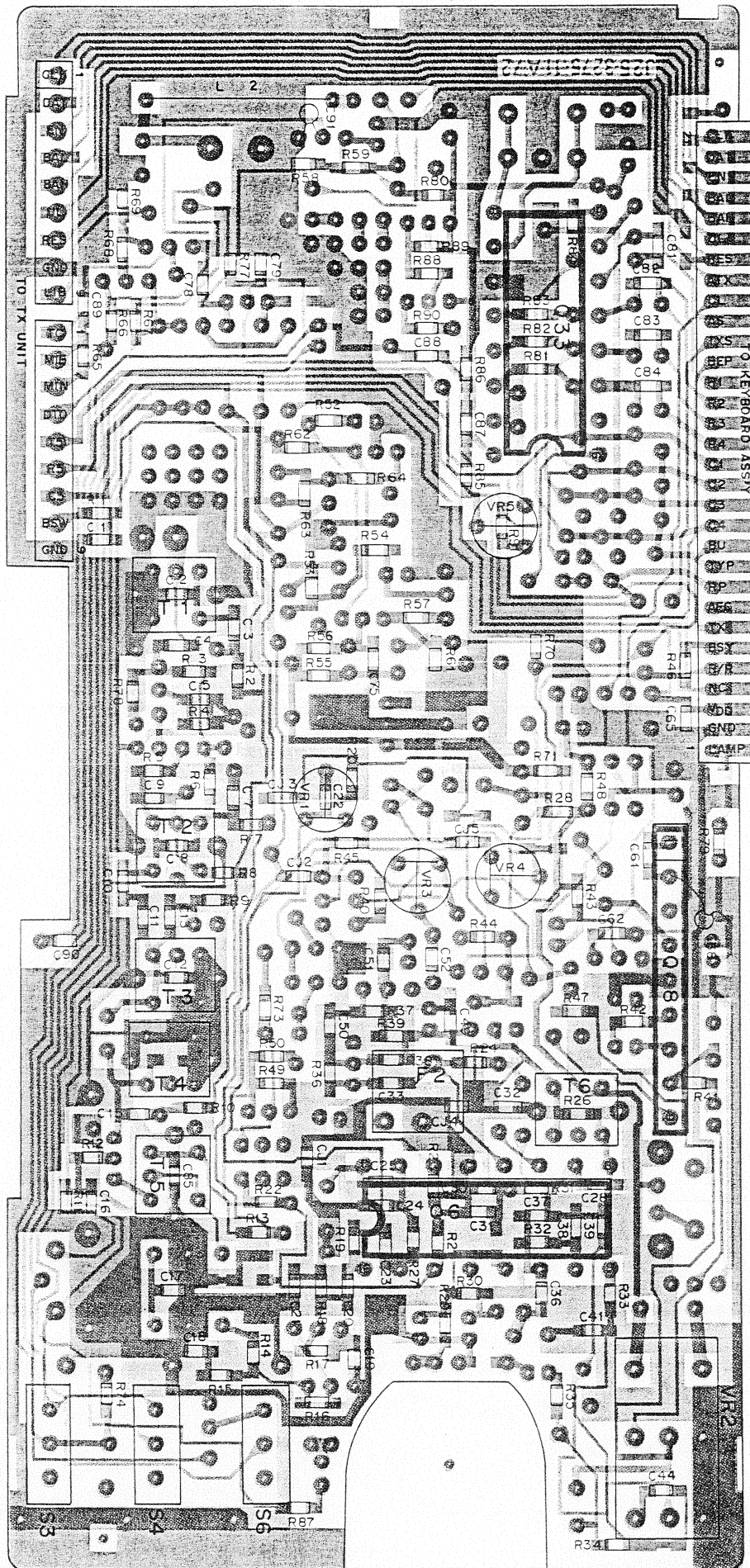


RX UNIT (X55-1380-XX) (B/2) Component side view

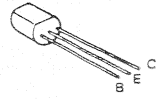


Q1 : 2SC2671(H) Q2,4,5 : 2SC2668(Y) Q3 : 2SK192A(Y)+J Q6 : MC3357P
 Q7,11,12,15,16,19,23,28,31,34 : 2SC2603(E) Q8 : BA526 Q9,14,18,29,30 : DTC124E(S)
 Q10,13 : DTC143TS Q17,21 : 2SB698 Q20,22,24-27,32 : 2SA1115(E) Q33 : TCM5087N Q35 : LVC517
 D1,3-5 : BB221 D2,9,10 : 1S1555 D6,7,21-24 : 1N60A D8 : MT28,2JA D11 : MT24,7JC
 D14,15 : 1SS106 D16-19,25-31,32(K,M1,M2,X),35(M2,X),36 : 1SS133

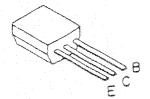
RX UNIT (X55-1380-XX) (A/2) (-10 : K, -21 : M3, -22 : M1, -71 : M2,X) Foil side view



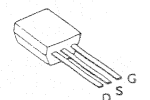
2SC2671



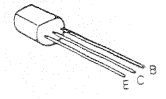
2SA1115
2SC2603
2SC2668



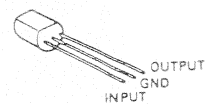
2SK192A



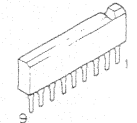
2SB698



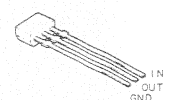
LVC517



BA526



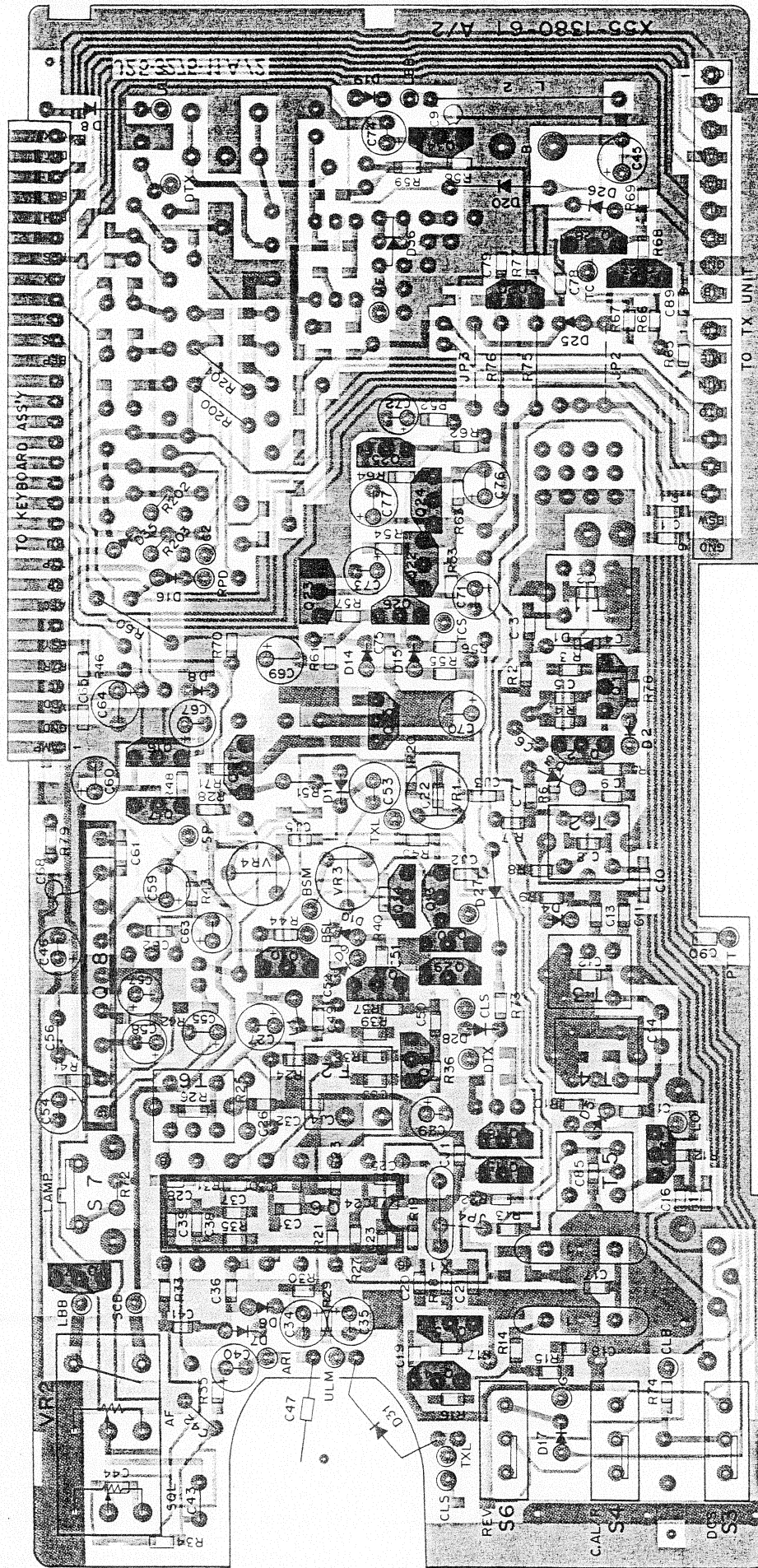
DTC124E
DTC143TS



TR-2600A/E PC BOARD VIEW

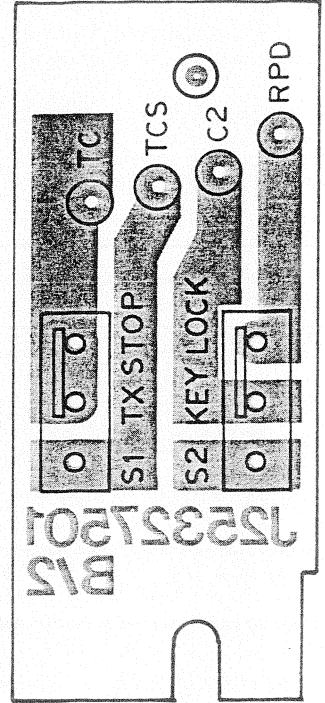
RX UNIT (X55-1380-61) (A/2) (T,W) Component side view

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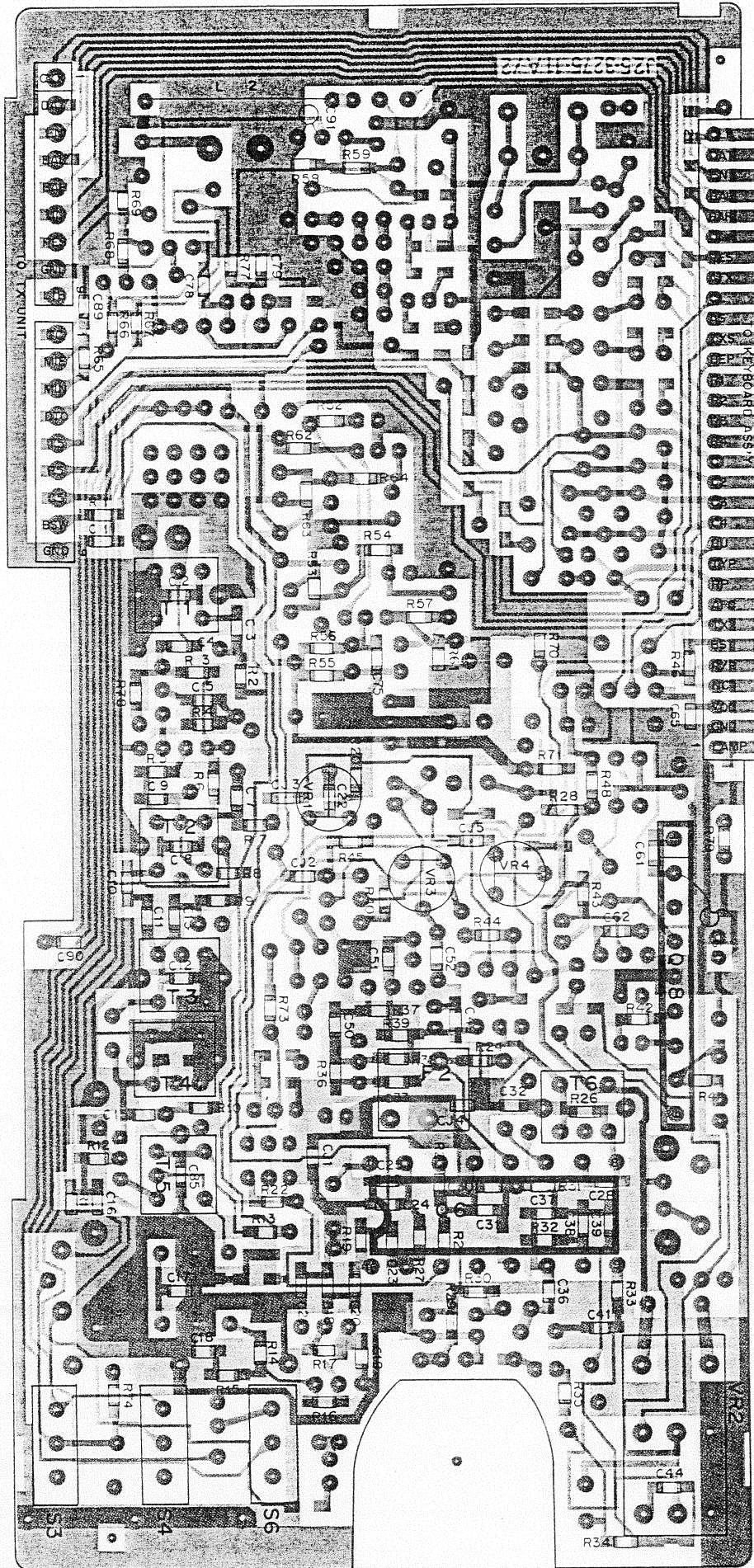


Q1 : 2SC2671(H) Q2,4,5 : 2SC2668(Y) Q3 : 1SK192A(Y)*J Q6 : MC3357P
 Q7,11,12,15,16,23,28,34 : 2SC2603(E) Q8 : BA526 Q9,14,18,29,30 : DTC124E(S)
 Q10,13 : DTC143TS Q17,21 : 2SB698 Q20,22,24-27 : 2SA1115(E) Q35 : LVC517
 D1,3-5 : BB221 D2,9,10 : 1S1555 D6,7 : 1N60A D8 : MTZ8.2JA D11 : MTZ4.7JC
 D14,15 : 1SS106 D16-19,25-28,31,35,36 : 1SS133

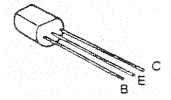
RX UNIT X55-1380-61 (B/2) Component side view



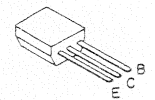
RX UNIT (X55-1380-61) (A/2) (T,W) Foil side view



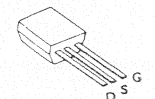
2SC2671



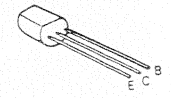
2SA1115
2SC2603
2SC2668



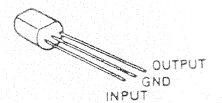
2SK192A



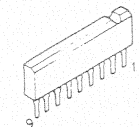
2SB698



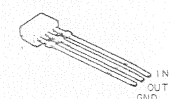
LVC517



BA526

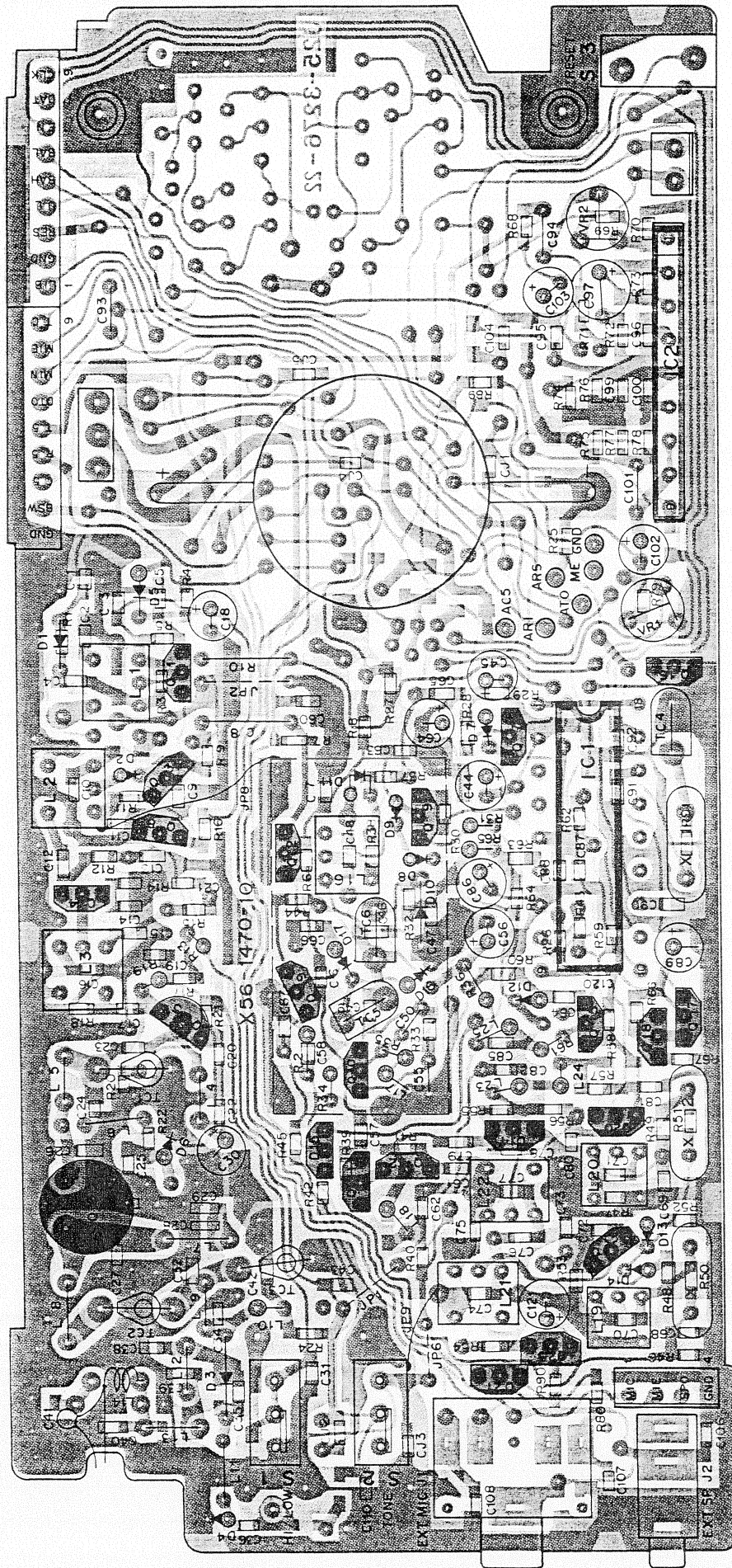


DTC124E
DTC143TS



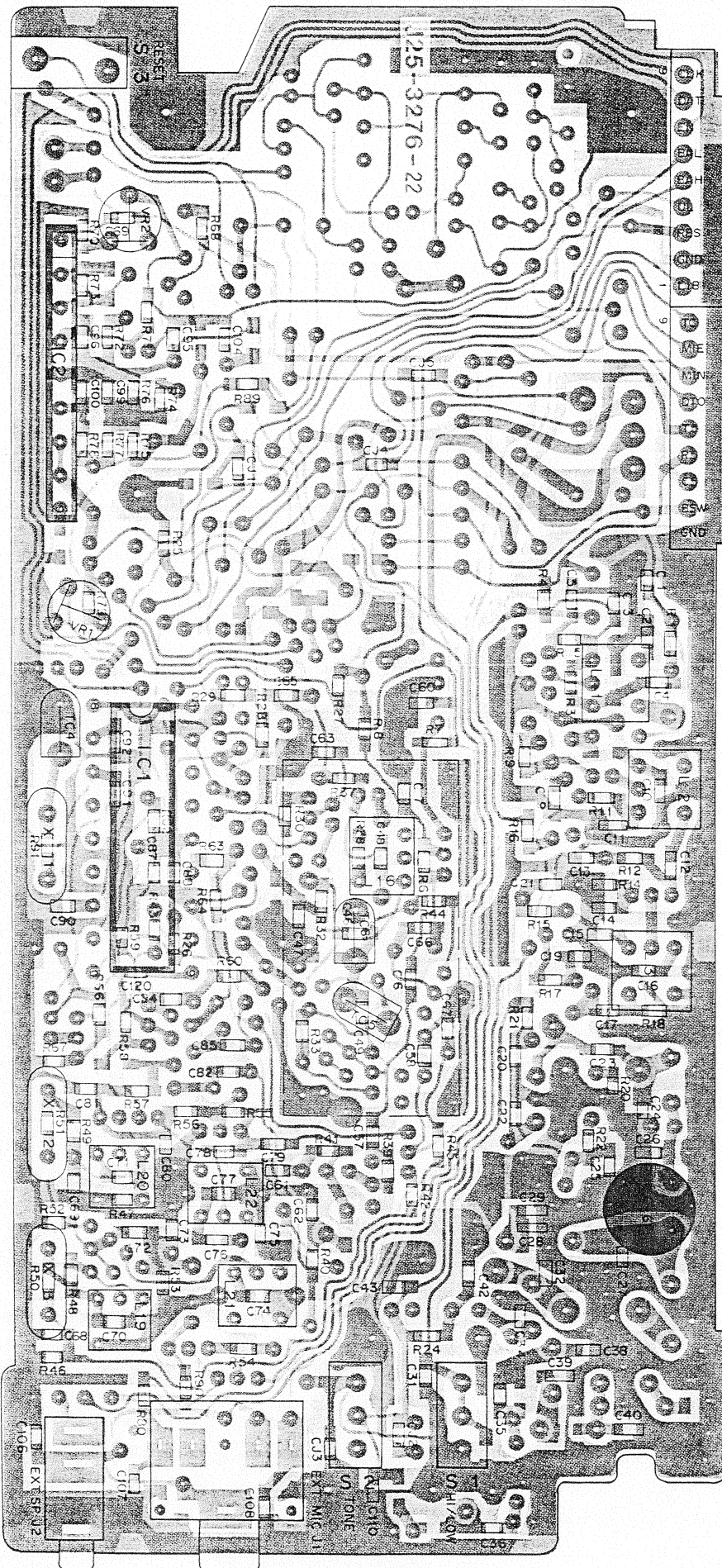
TR-2600A/E PC BOARD VIEWS

TX UNIT (X56-1470-10) (K,M1,M2,M3,X) Component side view

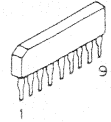


Q1-3,11,12,14 : 2SC2668(Y) Q4,13 : 2SC2347 Q5 : 2SC2053 Q6 : 2SC1947 Q7,16 : DTC144E(S) Q8,18,23 : 2SC2603(E) Q9,17,19 : 2SA1115(E)
 Q10 : 2SK192A(Y)*J Q15 : 2SC2669(Y) Q20,21 : DTA144E(S)
 IC1 : MC145155P*J IC2 : LA6458S
 D1 : BB221 D2,4,8,11-14,16 : MA856 D3 : M1301 D5-7,9,17 : 1SS133 D10 : 1SV123 D15 : MC921

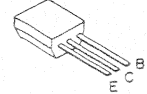
TX UNIT (X56-1470-10) (K,M1,M2,M3,X) Foil side view



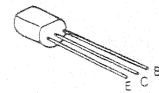
LA6458S



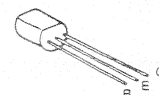
2SA1115
2SC2603
2SC2668
2SC2669



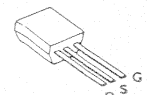
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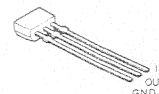
2SC2053



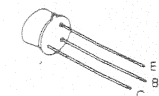
2SK192A

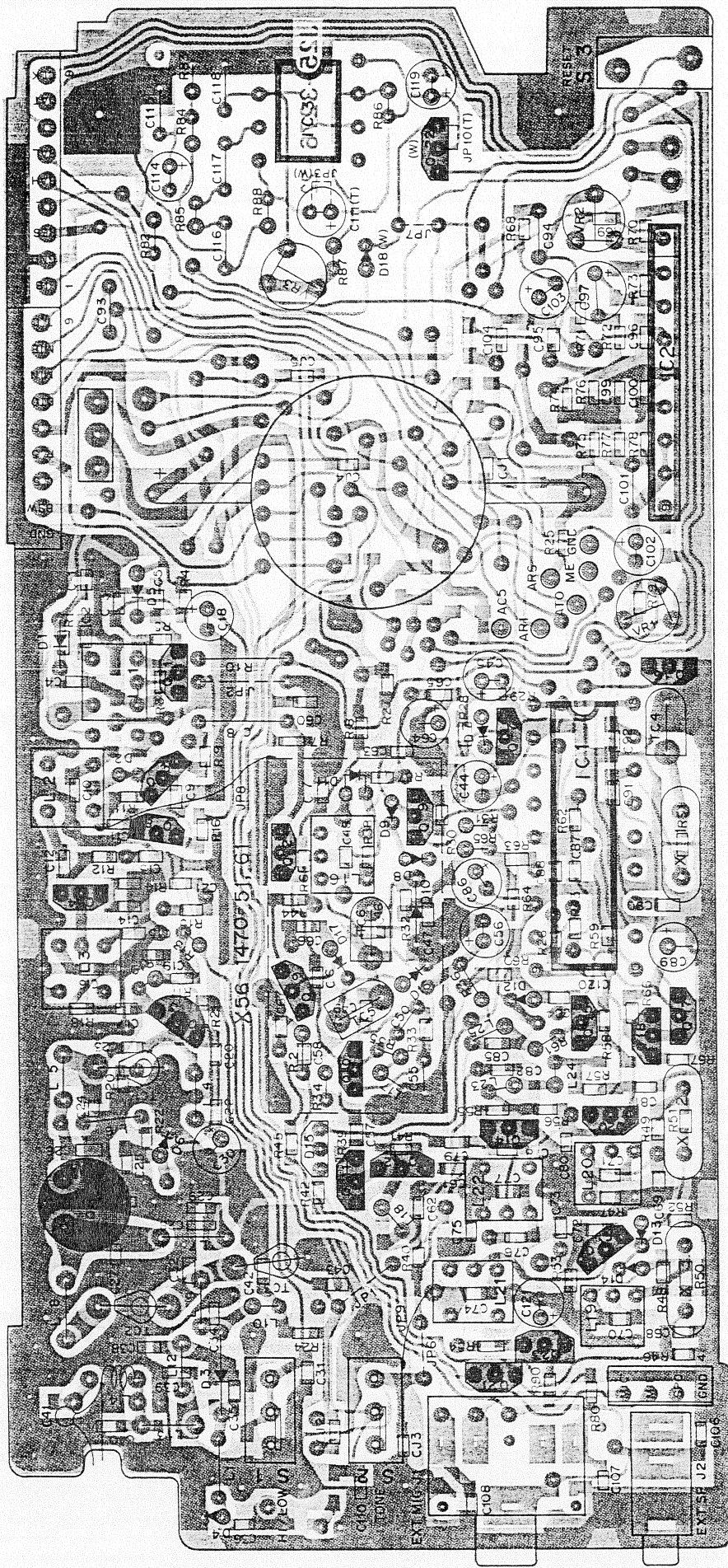


DTC144E



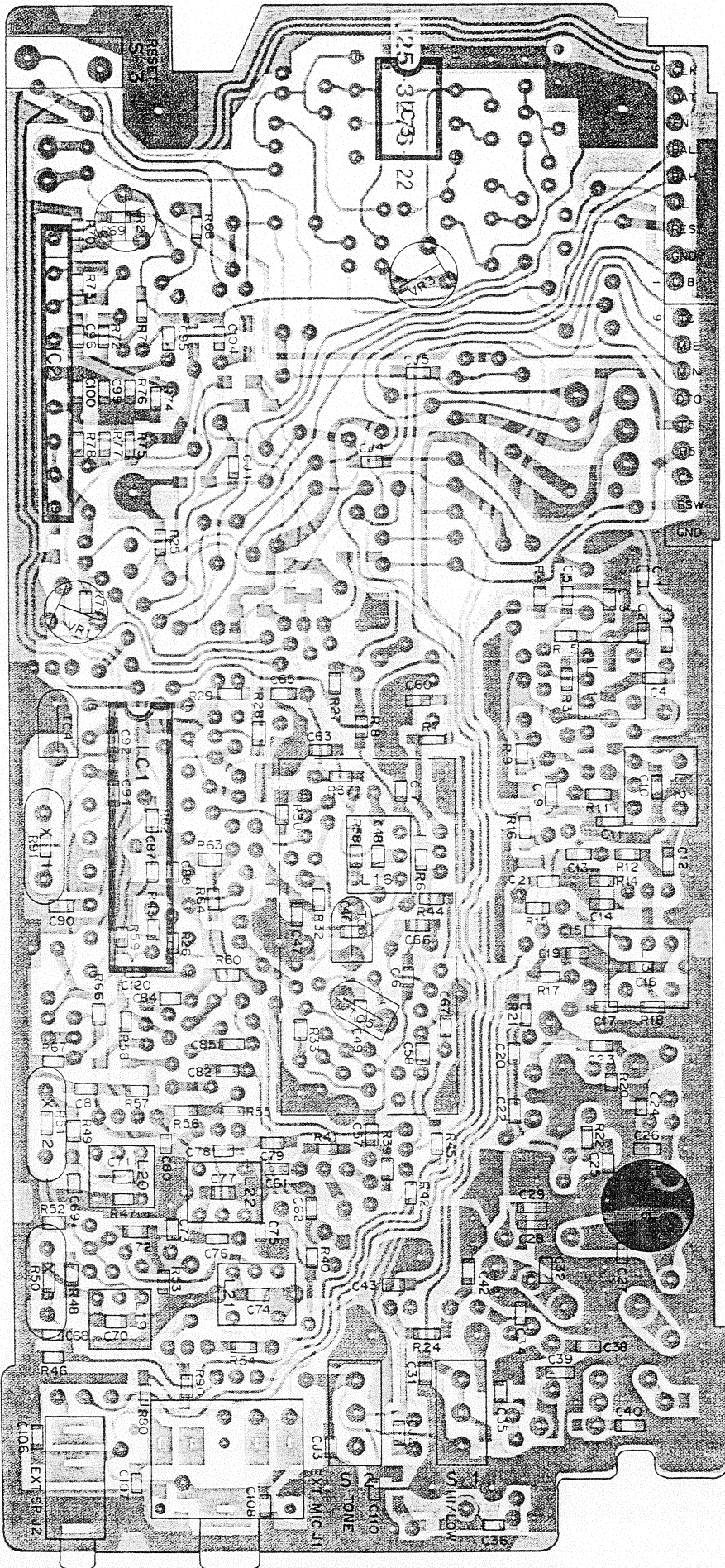
2SC1947



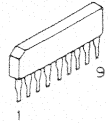


Q1-3,11,12,14 : 2SC2668(Y) Q4,13 : 2SC2347 Q5 : 2SC2053 Q6 : 2SC1947 Q7,16 : DTC144E(S) Q8,18,23 : 2SC2603(E) Q9,17,19 : 2SA1115(E)
Q10 : 2SK192A(Y)*J Q15 : 2SC2669(Y) Q20,21 : DTA144E(S) Q22(W) : DTA114E(S)
IC1 : MC145155P*J IC2 : LA6458S IC3 : NE555P
D1 : BB221 D2,4,8,11-14,16 : MA856 D3 : MI301 D5-7,9,17 : 1SS133 D10 : 1SV123 D15 : MC921 D18(W) : 1SS106

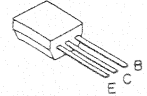
TX UNIT (X56-1470-XX) (-51 : T, -61 : W) Foil side view



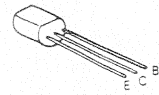
LA6458S



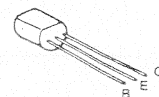
2SA1115
2SC2603
2SC2668
2SC2669



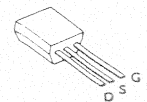
2SC2347



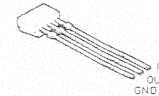
2SC2053



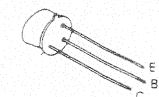
2SK192A



DTC144E



2SC1947

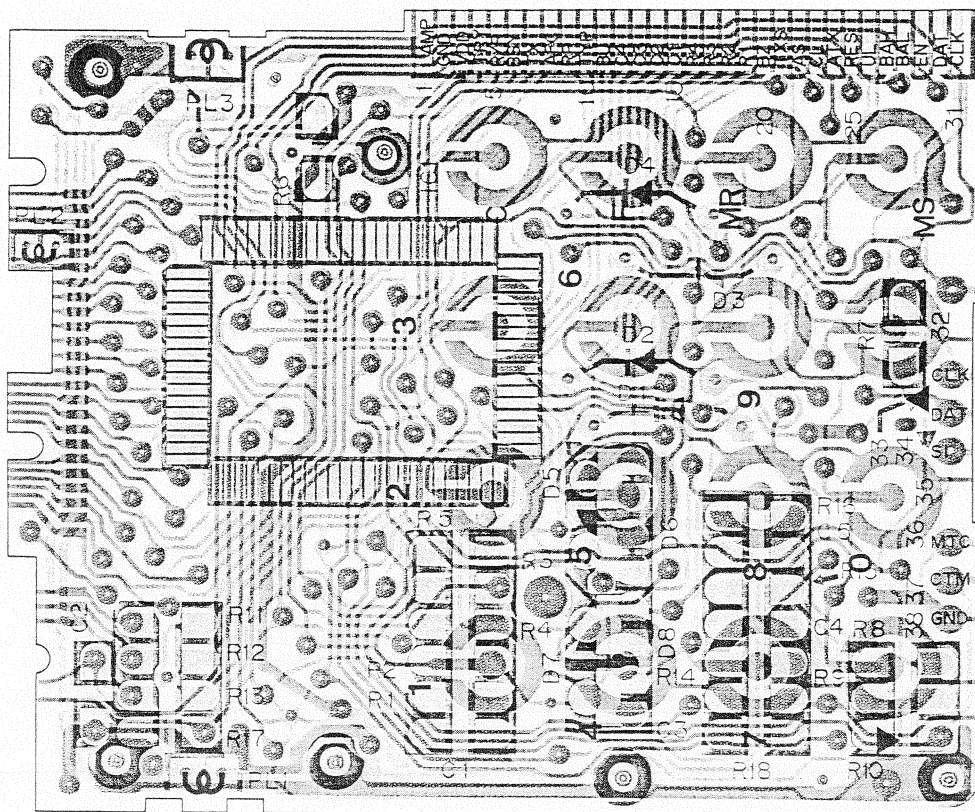


TR-2600A/E PC BOARD VIEW

(S59-0420-05) (K,M1)

KEY BOARD ASS'Y (S59-0422-05) (M2,M3,X,W) Foil side view

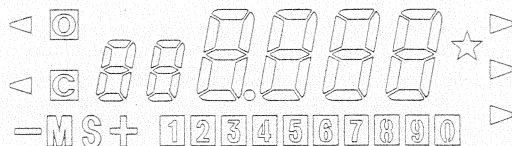
(S59-0423-05) (T)



IC1 : μ PD7514G-021-12 (K,M1,M3), μ PD7514G-026-12 (M2,X,T,W) D1-4 : 1N60A D5-8 : MA151A

KEY LOCK

REV

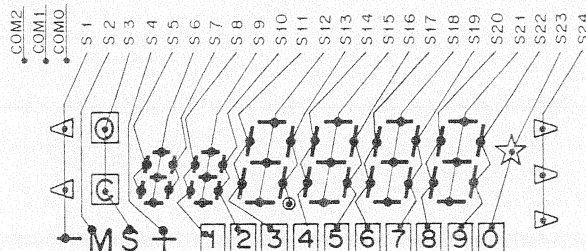


PROG,S

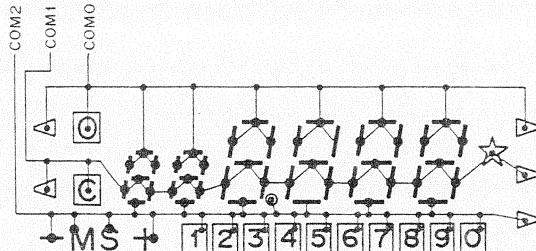
MS

ALERT

SEGMENT



COMMON



ADJUSTMENT

<Preparation>

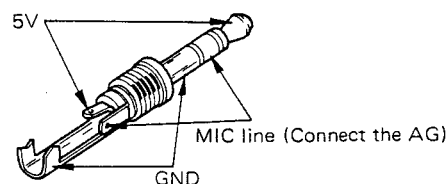
Unless otherwise specified, set the controls as follows

POWER/VOL OFF
 KEY LOCK OFF
 TX STOP OFF
 DCS ON
 HI/LOW HI
 SQL VR MIN

Notes:

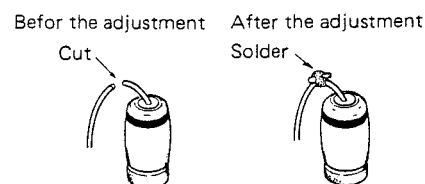
- When adjusting the trimmers or coils, use a non-induced adjusting rod of bakelite, etc.
- When adjusting the RX section never transmit to prevent SSG damage.

- Connect MIC connector as shown in below.
- The output level of SSG is indicated as SSG's open circuit.



- Cut the diodes before the adjustment and solder the diodes subsequently.

D32,33 **K,M1**
 D33,35 **M2,M3,X**
 D35 **T,W**



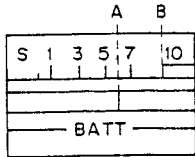
PLL ADJUSTMENTS

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
1. PLL	1) FREQ. : 159.995	RF VTVM	TX	TP2	TX	L21,22	MAX	Reference level 0.7V or more
	2) FREQ : 149.995							Within 3dB
	3) FREQ : 149.995	f.counter			TX	TC1,4		11.4950MHz±50Hz
2. VCO	1) FREQ : 159.995	DVM	TX	TP3	TX	L16	Adjust to 5.0V.	
	2) FREQ : 149.995					TC5	Set the same voltage as item 1).	Within ±0.1V
	3) Repeat item 1) and 2).							Item 1) voltage is within 5.0±0.1V
	4) FREQ : 149.995 Transmit						Remember the voltage.	
	5) Receive					TC6	Set the same voltage as item 3).	±0.1V
						L16		5.0±0.1V (4.9–5.1V)
	6) FREQ : 140.000 Transmit/Receive							1.4V or more
	7) FREQ : 149.995 Transmit/Receive							5.2V or less
	8) FREQ : 150.000 Transmit/Receive							1.4V, or more
	9) FREQ : 159.995 Transmit/Receive							5.2V or less

TX ADJUSTMENTS

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
1. Power	1) FREQ : 148.000 ANT : Power meter	Power meter (5W or 10W) Ammeter		ANT	TX	L2,3 TC1–3	Power MAX	2.5W or more
	2) FREQ : 144.000 K,M,X FREQ : 145.990 W,T						If current is over 800mA, adjust to 780mA with turn less capacitance from peak of TC3.	2.5W or more 800mA or less

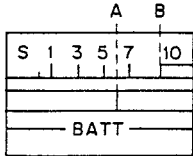
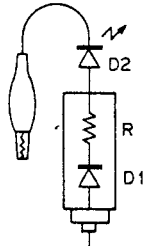
ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
2. f adjustment	1) FREQ : 146.000 Transmit/Receive				TX	L20		144.000MHz \pm 100Hz
	2) FREQ : 150.000 Transmit/Receive					L19		150.000MHz \pm 100Hz
3. Low power	1) FREQ : 146.000 K,M,X FREQ : 145.000 W,T ANT : Power meter	Power meter (3W)		ANT				0.1—0.6W 400mA or less
4. Modulation	1) FREQ : 146.000 K,M,X FREQ : 145.000 W,T AG : 1kHz, 80mV K,M,X AG : 1kHz, 45mV W,T	Power meter Coupler Linear		ANT	TX	VR1	Linear detection P-P/2	\pm 4.5kHz
						VR2	—P or + P	\pm 4.5kHz \pm 50Hz
	2) AG : 1kHz, 8mV K,M,X AG : 1kHz, 4.5mV W,T	detector AG AF VTVM Oscillo- scope DVM						\pm 3.0kHz— \pm 3.8kHz
5. Tone	1) Connect to TU-35. Tone FREQ : 88.5Hz						Check	DEV \pm 400Hz or more
	2) T type only				TX	VR3	Shorted TP4 to TP5. 1750 \pm 10Hz (1740—1760Hz)	
							P-P/2	DEV \pm 2.5kHz or more
	3) W type only TONE SW : ON				TX	VR3	1750 \pm 10Hz (1740—1760Hz)	
							Check	DEV \pm 2.5kHz or more
6. DTMF K,M,X type only	1) FREQ : 146.000 Transmit				RX	VR5	Depress MS key, DEV \pm 4.0kHz	
7. BATT meter	1) HI/LOW SW : LOW Source voltage : 6.5V Transmit	DVM		S meter	RX	VR4	Set to point A.	

RX ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
1. Sensitivity	1) FREQ : 146.050 K,M,X FREQ : 145.050 W,T SSG : 10dB TX.S SW : ON	SSG AF VTVM SP		S meter	RX	VR1 T1—5	Repeat 2 or 3 times on T1—4.	Maximum reading of volt
	2) SSG : 20dB (DEV : 5kHz, f : 1kHz)	Oscillo- scope			TX	L1		
	3) SSG : 0dB (DEV : 5kHz, f : 1kHz)	Volt meter			RX	T6	AF MAX	
	4) FREQ : 155.000 K,M,X FREQ : 145.050 W,T						Check	S/N 28dB or more Reference level 32dB.
							Check	S/N 26dB or more Reference level 31dB.

ADJUSTMENT

Item	Condition	Measurement			Adjustment			Specification/Remarks
		Test equipment	Unit	Terminal	Unit	Part	Method	
2. S meter	1) FREQ : 146.050 K,M,X FREQ : 145.050 W,T SSG : 20dB (MOD : OFF)			S meter	RX	VR3	Set to point B. 	
3. Back up check	1) POWER/VOL : OFF Disconnect battery connector. 	Use jig as illustrated	RX	D26				LED goes off slowly.

OPERATION CHECKS

Item	Condition	Operation check
1. Call sign input	1) Connect to EXT. SP POWER/VOL : ON RESET SW : ON	s
	2) Depress 1 key	s 1 . 1
	3) Depress 1 key	s 1 . 1 1 Tone sounds.
	4) Depress 2 key two times.	s 2 . 2 2 Tone sounds.
	5) Depress 3 key two times.	s 3 . 3 3 Tone sounds.
	6) Depress 4 key two times.	s 4 . 4 4 Tone sounds.
	7) Depress 5 key two times.	s 5 . 5 5 Tone sounds.
	8) Depress 6 key two times.	s 6 . 6 6 Tone sounds. ↓ s 1 4 5 . 0 0 0
2. Digital code input	1) Depress MS key	0 0 . 0 0 0
	2) Depress 1 key	1 Tone sounds.
	3) Depress 1 key	1 1 Tone sounds.
	4) Depress 1 key	1 1 . 1 Tone sounds.
	5) Depress 1 key	1 1 . 1 1 Tone sounds.
	6) Depress 1 key	1 1 . 1 1 1 Tone sounds.
	7) Depress MS key	0 0 . 0 0 0 Tone sounds.
	8) Depress 1 → 2 → 3 → 4 → 5 keys.	1 2 . 2 4 5 Tone sounds when depress the key.
	9) Depress MS key	0 0 . 0 0 0 Tone sounds.
	10) Depress 6 → 7 → 8 → 9 → 0 keys.	6 7 . 8 9 0 Tone sounds when depress the key.

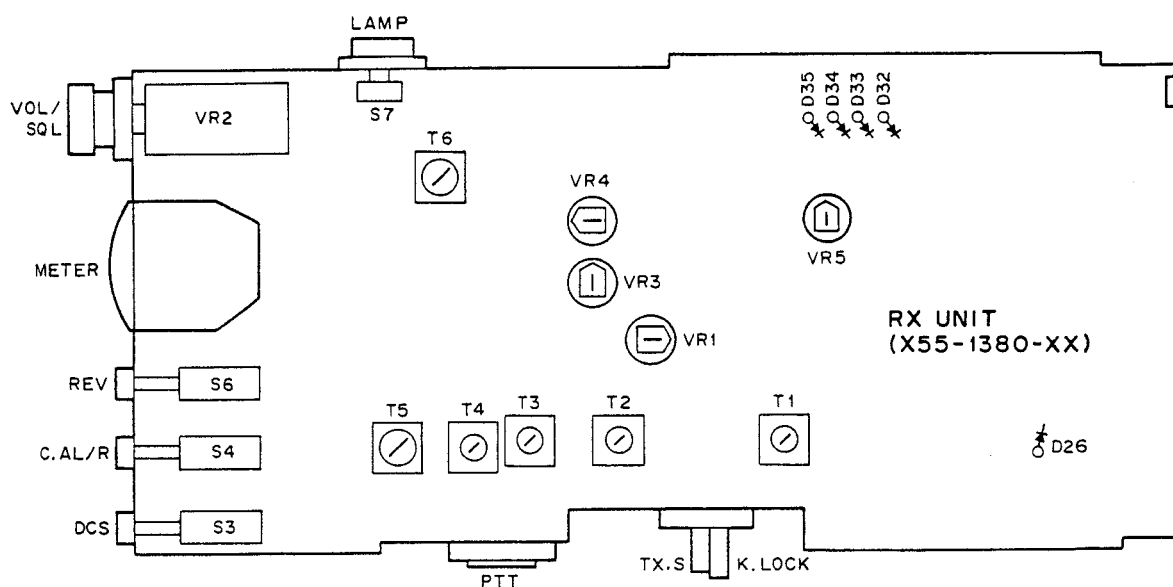
Item	Condition	Operation check
3. Call sign, Digital code recall	1) Depress C key.	s 1 4 5 . 0 0 0
	2) Depress F → 8 keys	s
	3) Depress ▲ → ▲ keys Repeat above method 5 times.	s 1 . 1 1 Tone sounds. s 2 . 2 2 Tone sounds. s 3 . 3 3 Tone sounds. s 4 . 4 4 Tone sounds. s 5 . 5 5 Tone sounds. s 6 . 6 6 Tone sounds. ↓ s 1 4 5 . 0 0 0 Tone sounds.
	4) Depress MS key	6 7 . 8 9 0 Tone sounds.
	5) Depress MS key	1 1 . 1 1 1 Tone sounds.
	6) Depress MS key	1 2 . 3 4 5 Tone sounds.
	7) DCS SW : OFF	s 1 4 5 . 0 0 0 Tone sounds.
4. Scan verify	1) SQ VR : Threshold (Reference 8—10 o'clock) Depress ▼ key.	s 1 4 4 . 9 9 5 Tone sounds.
	2) Depress ▼ key several times.	When depressed, tone sounds and frequency is 5kHz decreases.
	3) Depress ▼ key continuously.	Down speed becomes faster.
	4) Stop depressing ▼ key.	Down speed becomes slowly.
	5) SQ VR : MIN (Counterclockwise)	Scan stops.

ADJUSTMENT

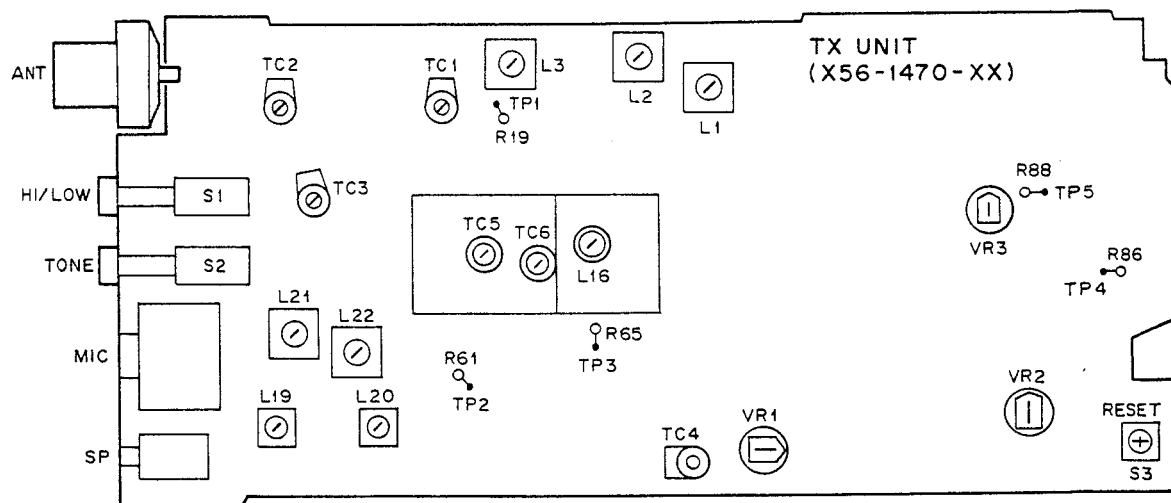
Item	Condition	Operaton check	Item	Condition	Operaton check
4. Scan verify	6) SQ VR : Threshold	Scan starts again.	8. Memory input K,M,X only	1) Depress 4 → 0 → 0 → 0 → 0 → F → MR → 1 keys.	1 4 0 . 0 0 0 1
	7) Depress C key.	Scan stops. Tone sounds.		2) Depress 4 → 9 → 9 → 9 → 5 → F → MR → 2 keys	1 4 9 . 9 9 5 2
	8) Depress C key.	s 1 4 5 . 0 0 0 Tone sounds.		3) Depress 5 → 0 → 0 → 0 → 0 → F → MR → 3 keys	1 5 0 . 0 0 0 3
	9) Depress ▲ key.	s 1 4 5 . 0 0 5 Tone sounds.		4) Depress 5 → 9 → 9 → 9 → 5 → F → MR → 4 keys	1 5 9 . 9 9 5 4
	10) Depress ▲ key several times.	When depressed, tone sounds and increases 5kHz.		5) Depress 4 → 4 → 0 → 0 → 0 → F → MR → 5 keys.	1 4 4 . 0 0 0 5
	11) Depress ▲ key continuously.	Display frequency increases faster.		6) Depress 4 → 6 → 0 → 0 → 0 → F → MR → 6 keys.	1 4 6 . 0 0 0 6
	12) Stop depressing ▲ key	Display frequency increases slowly.		7) Depress 4 → 8 → 0 → 0 → 0 → F → MR → 7 keys.	1 4 8 . 0 0 0 7
	13) Depress F → 7 keys.	0 is displayed. Display increases each 5 seconds.		8) Depress 4 → 6 → 0 → 5 → 0 → F → MR → 8 keys.	1 4 6 . 0 5 0 8
	14) Depress F → 9 keys	C is displayed. Scan stops.		9) Depress 5 → 5 → 0 → 0 → 0 → F → MR → 9 keys	1 5 5 . 0 0 0 9
	15) SQ VR : MIN (Counterclockwise)	Scan stops.	9. MS verify	Input following frequency 1 140.000 2 149.995 3 150.000 4 159.995 5 144.000 6 146.000 7 145.000 8 145.050 9 155.000	
	16) Depress F → 7 keys.	0 goes off. Scan stops.			
	17) Depress F → 9 keys	C goes off. Display increases each 5 seconds.			
	18) SQ VR : Threshold	Scan starts.			
	19) Depress C key	Scan stops.			
5. Program scan	1) Depress 4 → 4 → 0 → 0 → 0 → F → MR → 8 keys.	s 1 4 4 . 0 0 0 8			
	2) Depress ▲ → ▲ keys	s 1 4 4 . 0 1 0			
	3) Depress F → ▲ keys	Tone sounds.			
	4) Depress 4 → 4 → 1 → 0 → 0 → F → MR → 9 keys	s 1 4 4 . 1 0 0 9			
	5) Depress F → ▼ keys.	PROG.S ► is displayed. Display scan from 144.000 to 144.100 by 10kHz steps.			
	6) Depress C key.	Scan stops.			
6. ALERT	1) Depress F → 0 keys	ALERT ► is displayed.		1) Depress MS key.	MS ► is displayed.
	2) SQ VR : MIN (Counterclockwise)	The tone sounds each 6 seconds.		2) SQ VR : Threshold	Scan channel 1 to 0 in order.
	3) Depress F → 0 keys	ALERT ► goes off.		3) Depress MS and 2 keys at the same time.	Channel 2 is skipped.
	4) Depress C key.			4) Depress C key.	MS ► goes off Scan stops.
7. Repeater shift	1) Depress C key.	s 1 4 5 . 0 0 0		5) Depress MR key	1 2 3 4 5 6 7 8 9 0 is displayed.
	2) Depress 4 → 4 → 0 → 0 → 0 → F → MR → 0 keys.	s 1 4 4 . 0 0 0 0		6) Depress 2 key	1 4 9 . 9 9 5 ★ is displayed. 2
	3) Depress C → C keys	s 1 4 5 . 0 0 0		7) Depress MR and 2 keys at the same time. Depress C key. Depress MR → 2 keys.	★ should not be light.
	4) REV SW : Push	s 1 4 5 . 0 0 0			
	5) Depress F → 1 keys	- 1 4 5 . 0 0 0			
	6) REV SW : Push	- 1 4 4 . 4 0 0			
	7) Depress F → 2 keys	M 1 4 5 . 0 0 0			
	8) REV SW : Push	M 1 4 4 . 0 0 0			
	9) Depress F → 3 keys.	+ 1 4 5 . 0 0 0			
	10) REV SW : Push	+ 1 4 5 . 6 0 0			
	11) Depress F → 5 keys	s 1 4 5 . 0 0 0			

ADJUSTMENT

TOP VIEW



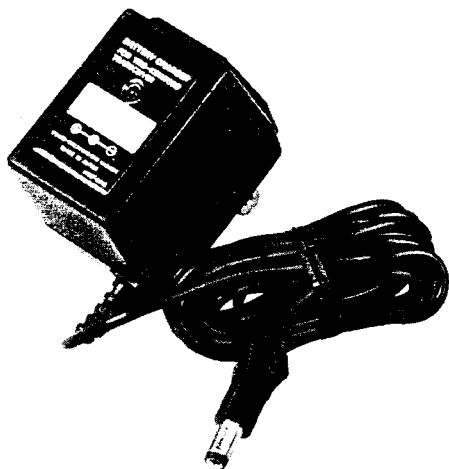
BOTTOM VIEW



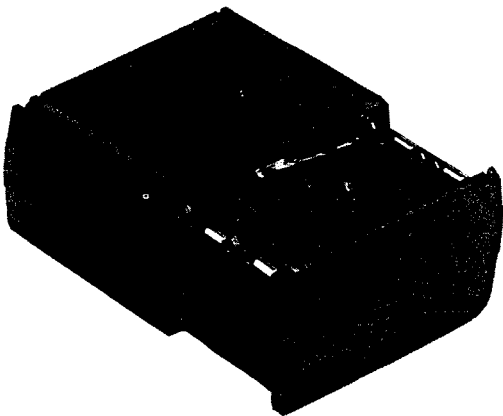
TR-2600A/E

BC-2 (BATTERY CHARGER) T,W TYPE ONLY/
BT-3 (AA MANGANESE/ALKALINE BATTERY CASE)/SC-9 (SOFT CASE)

BC-2 OUTSIDE VIEW



BT-3 OUTSIDE VIEW



BC-2 SPECIFICATIONS

Part No.	W09-0317-05	W09-0318-05
Rating	Primary side: AC220V 50/60 Hz Secondary side: DC 10.15V DC 42.5ma	Primary side: AC 240V 50 Hz Secondary side: DC 10.15V DC42.5ma
Output voltage (resistance loaded)	At 0mA: DC 12.5V \pm 5% At 42.5mA: DC 5.5V \pm 5%	At 0mA: DC 12.6V \pm 5% At 42.5mA: DC 5.6V \pm 5%
Weight	About 240g	About 220g
Consumed power	4W or less with 50 Hz at rated input and battery loaded.	4W or less with 50 Hz at rated input and battery loaded.
Destination	Europe	England

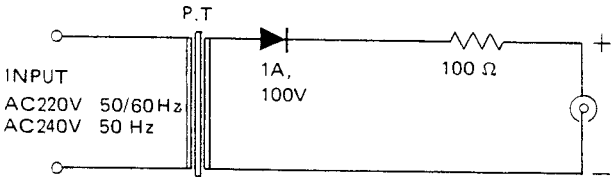
BT-3 SPECIFICATIONS

Rating
Battery AA Manganese/Alkaline battery x 6 pcs
Voltage 9V (1.5V x 6)
Dimensions 66 (W) x 52 (H) x 40 (D) mm

BT-3 PARTS LIST

Part No.	Re- marks	Description	Ref. No.
A02-0681-13		Case (inside)	
A02-0682-13		Case (outside)	
E23-0432-04		Lug plate x 2	
E29-0427-04		Connector and terminal x 4	
E29-0450-04		Connector and terminal x 4	
N09-0638-05		Round screw x 2	

BC-2 SCHEMATIC DIAGRAM

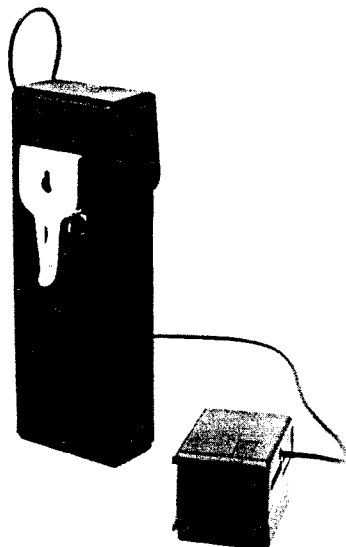


SC-9 PARTS LIST

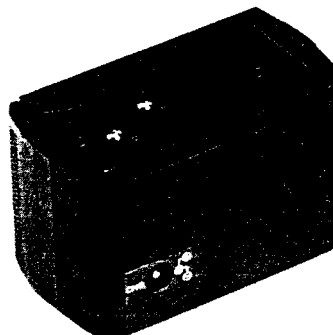
Part No.	Re- marks	Description	Ref. No.
J19-1365-04		Belt hook ass'y	
N08-0512-04	N	Dressed screw x 2	

EB-3 (EXTERNAL C MANGANESE/ALKALINE BATTERY CASE)/ PB-26 (Ni-Cd BATTERY)

EB-3 OUTSIDE VIEW



PB-26 OUTSIDE VIEW



EB-3 SPECIFICATIONS

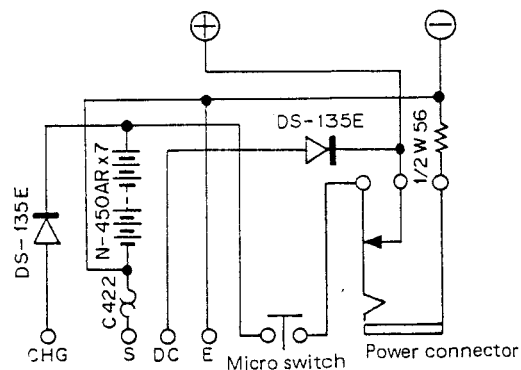
Rating

Battery C Manganese/Alkaline battery x 6 pcs
Voltage 9V (1.5V x 6)
Dimensions 63 (W) x 175 (H) x 34 (D) mm

PB-26 SPECIFICATIONS

Nominal voltage 8.4V, 450mAh
Recharge time When fully discharged approx.
15 hours
(with TR-2600 series/TR-3600 series supplied charger or MS-1)
Approx. 1.5hours
(with ST-2)
Working time Depends on transceiver,
operating habits,
Charge/discharge cycle Approx. 300cycles

PB-26 SCHEMATIC DIAGRAM



PB-26 PARTS LIST

EB-3 PARTS LIST

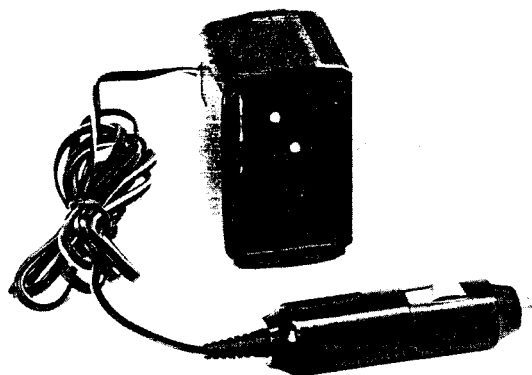
Part No.	Re- marks	Description	Ref. No.
A02-0683-03	Δ	Case (upper)	
A02-0684-03	Δ	Case (lower)	
E23-0432-04	Δ	Lug plate x 2	
E30-1793-05	N	Cord ass'y	
F19-0623-04	Δ	Rubber cap (A)	
J21-4154-04	NΔ	Fitting plate (cord bushing)	
N09-0638-05	Δ	Round screw x 2	

Part No.	Re- marks	Description	Ref. No.
A02-0683-03	Δ	Case (upper)	
A02-0684-03	Δ	Case (lower)	
E08-0271-05		Power connector	
E23-0432-04		Lug plate	
E29-0428-04		Terminal	
N09-0637-05		Round flat screw x 4	
N09-0638-05		Round screw x 2	

TR-2600A/E

DC-26 (DC-DC CONVERTER)

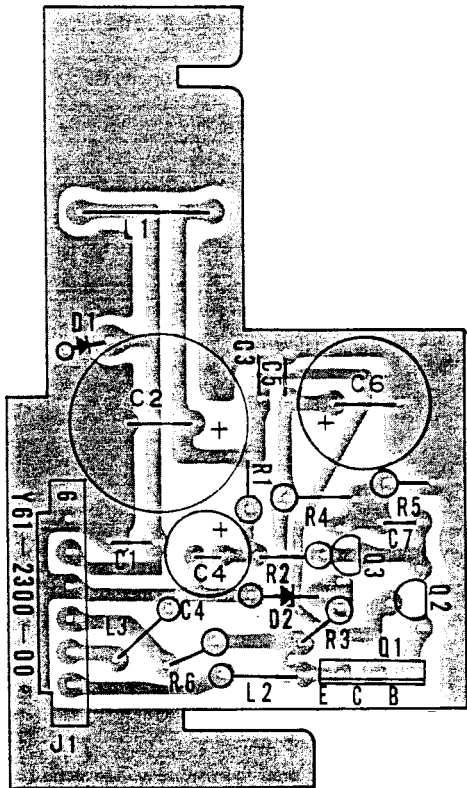
DC-26 OUTSIDE VIEW



DC-26 SPECIFICATIONS

- Input voltage 13.8V DC \pm 15%
Output voltage 8.4V DC \pm 5%
Output current 800mA (at input voltage of 13.8V DC, with max. lead)
Weight Approx. 110g
Accessories Instruction manual, 1
Spare fuse (2A), 1

DC-26 PC BOARD VIEW

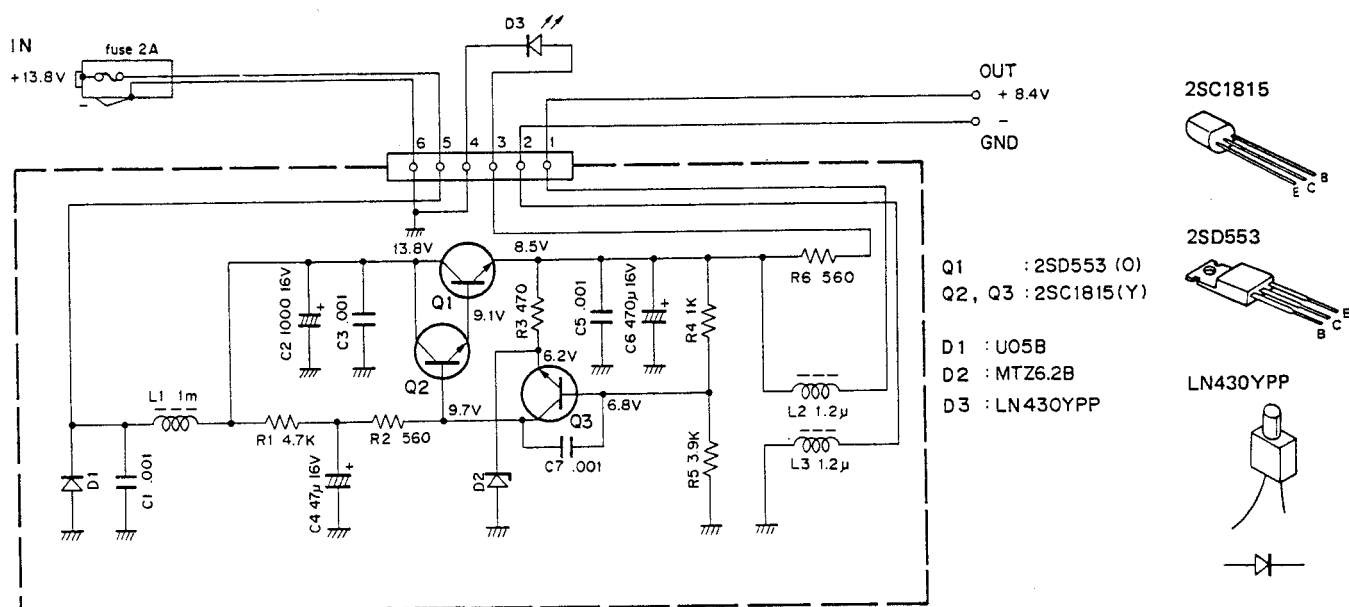


DC-26 PARTS LIST

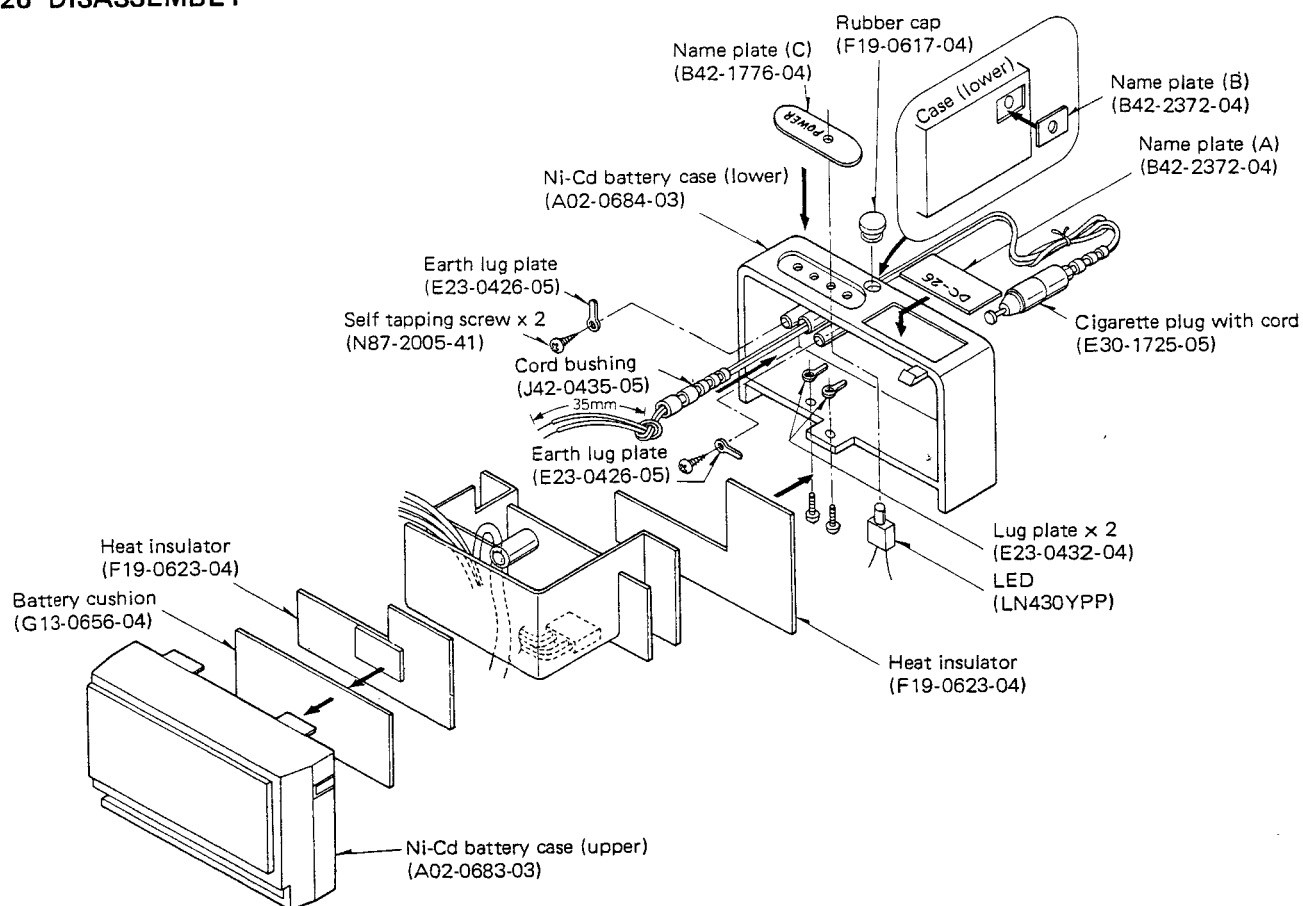
Part No.	Re- marks	Description	Ref. No.
A02-0683-03		Ni-Cd battery case (upper)	
A02-0684-03		Ni-Cd battery case (lower)	
B42-1776-04	Δ	Name plate (C) bottom (LED)	
B42-2372-04	N Δ	Name plate (A) bottom	
B42-2373-04	N Δ	Name plate (B) rear	
B50-4171-00	N	Instruction manual	
CE04W1C470M		E 47 16V	C4
CK45B1H102K		G 0.001 \times 4	C1,3,5,7
C90-0820-05		E 470 16V	C6
C90-0850-05		E 1000 16V	C2
E23-0426-05		Earth lug plate \times 2	
E23-0432-04		Lug plate \times 2	
E30-1725-05		Cigarette plug with cord	
F06-2027-05		Fuse accessory	
F19-0617-04		Rubber cap	
F19-0623-04	Δ	Heat insulator	
F20-0516-05		Insulating plate	
F29-0014-05		Insulating washer	
G13-0656-04	Δ	Battery cushion	
H01-4606-04	N Δ	Carton case (inside)	
H25-0029-04		Protective bag (Fuse)	
H25-0077-03		Protective bag \times 2	
J42-0435-05	Δ	Cord bushing	
J61-0019-05		Vinyle tie	
L15-0302-05		Troidal coil 1mH	L1
L34-0438-05		Choke coil \times 2 1.2 μ H	L2,3
N09-0638-05		Round screw (M2 \times 4) \times 2	
N10-2030-41		Hex. nut (TR)	
N30-3008-41		Pan head screw (TR)	
N87-2005-41		Self tapping screw \times 2 (INPUT lug)	
2SC1815(Y)		TR \times 2	Q2,3
2SD553(O)		TR	Q1
U05B		Diode	D1
MTZ6.2B		Zener diode	D2
LN430YPP		LED	D3

DC-26 (DC-DC CONVERTER)

DC-26 SCHEMATIC DIAGRAM



DC-26 DISASSEMBLY



HMC-1 (HEADSET WITH VOX)

HMC-1 OUTSIDE VIEW



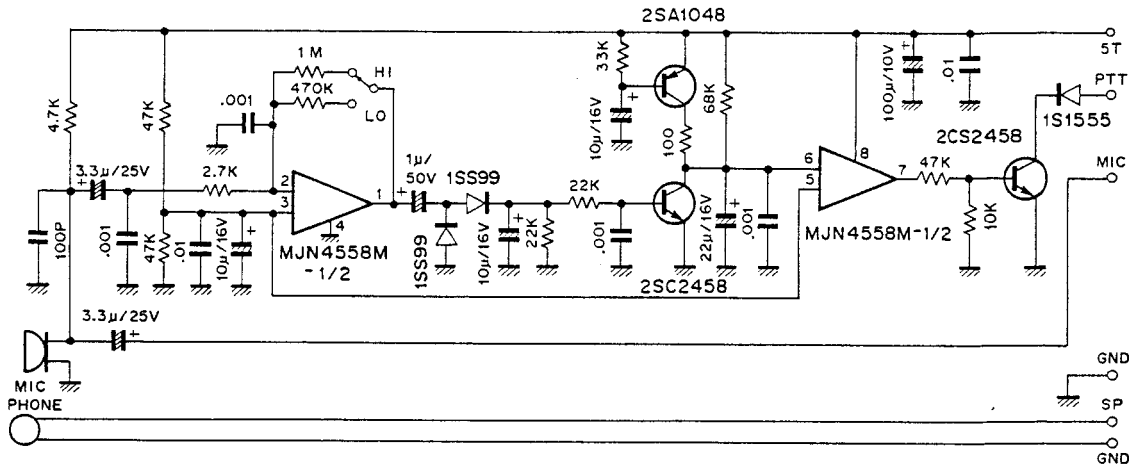
HMC-1 PARTS LIST

Part NO.	Re- marks	Description	Ref. NO.
E30-1790-08		Cord with plug	
CK73FB1E103K		Chip cap. 0.01	C1,11
CK73FB1H102K		Chip cap. 0.001	C7,8
CC73FSL1H102K		Chip cap. 0.001	C13
RD73FB2A103J		Chip resistor, 10k Ω	R1,13
RD73FB2A473J		Chip resistor, 47k Ω	R2,3,12,14
RD73FB2A101J		Chip resistor, 100 Ω	R4
RD73FB2A333J		Chip resistor, 33k Ω	R5
RD73FB2A183J		Chip resistor, 18k Ω	R6
RD73FB2A472J		Chip resistor, 4.7k Ω	R7
RD73FB2A223J		Chip resistor, 22k Ω	R8
RD73FB2A224J		Chip resistor, 220k Ω	R9
RD73FB2A332J		Chip resistor, 3.3k Ω	R11

HMC-1 SPECIFICATIONS

Mic input sensitivity 1.5mV (1kHz)
Delay time Approx. 1.2 sec.
DC current 3.5mA

HMC-1 SCHEMATIC DIAGRAM



TU-35B (REPEATER TONE UNIT)

TU-35B SPECIFICATIONS

Oscillator frequency..... 1 MHz \pm 0.1%

Usable frequency range..... 37 EIA

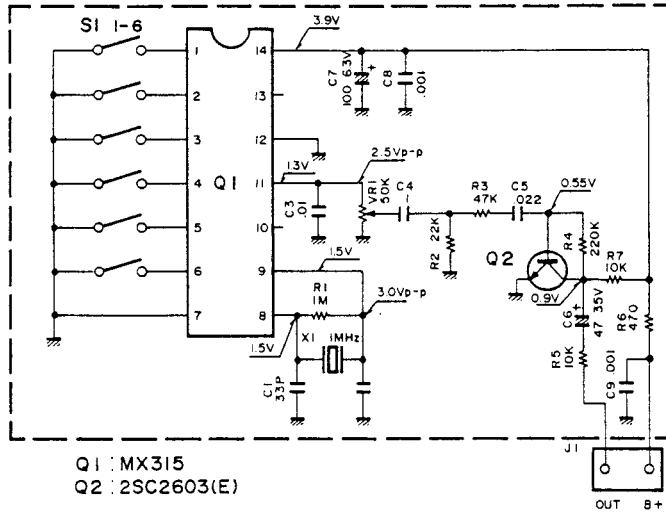
Specification

Group Frequencies

(67.0 ~ 250.3 Hz)

Weight 8 grams

TU-35B SCHEMATIC DIAGRAM



TU-35B TONE FREQUENCY DATA

8	1	14	Vdd
4	2	13	Tx ENABLE
2	3	12	Tx ENABLE
T	4	11	Tx OUTPUT
X	5	10	NC
Y	6	9	XTAL
Vss	7	8	CLOCK

TU-35B PARTS LIST

Part No.	Re- marks	Description	Q'ty
TU-35B			
B40-2638-04	N	Name plate	1
B42-1771-04	N	Frequccy name plate	1
B50-4019-00	N	Instruction manual	1
J39-0417-04		Spacer	1
N35-2004-41		Bind screw	2
X52-1200-00	N	Tone unit M	1
X52-1200-11	N	Tone unit K	1

Tone Unit (X52-1200-XX)

CC45CH1H330J	C	33PF	C1,2	2
CK45B1H102K	C	0.001 μ F	C8,9	2
CS15E1VR47M	T	0.47 μ F 35V	C6	1
C90-0842-05	E	100 μ F 6.3V	C7	1
C91-0422-05	Cap	0.01 μ F	C3	1
C91-0426-05	Cap	0.022 μ F	C5	1
C91-0431-05	Cap	0.1 μ F	C4	1
L77-0982-05	N	Crystal 1MHz	X1	1
R12-4505-05		Trim. Pot. 50 K Ω (B)	VR1	1
S31-6401-05	N	Dip switch	S1	1
2SC2603 (E)	Tr		Q2	1
MX315	N	IC	Q1	1

#	EIA Specification Group Hz	Program Lines (ON...1, OFF...0)	1	2	3	4	5	6
1	C 67.0		1	1	1	1	1	1
2	B 71.9		1	1	1	1	1	0
3	C 74.4		1	1	1	0	1	1
4	A 77.0		1	1	1	1	0	0
5	C 79.7		1	1	0	1	1	1
6	B 82.5		1	1	1	0	1	0
7	C 85.4		1	1	0	0	1	1
8	A 88.5		1	1	1	0	0	0
9	C 91.5		1	0	1	1	1	1
10	B 94.8		1	1	0	1	1	0
11	A 100.0		1	1	0	1	0	0
12	B 103.5		1	1	0	0	1	0
13	A 107.2		1	1	0	0	0	0

#	EIA Specification Group Hz	Program Lines (ON...1, OFF...0)	1	2	3	4	5	6
14	B 110.9		1	0	1	1	1	0
15	A 114.8		1	0	1	1	0	0
16	B 118.8		1	0	1	0	1	0
17	A 123.0		1	0	1	0	0	0
18	B 127.3		1	0	0	1	1	0
19	A 131.8		1	0	0	1	0	0
20	B 136.5		1	0	0	0	1	0
21	A 141.3		1	0	0	0	0	0
22	B 146.2		0	1	1	1	1	0
23	A 151.4		0	1	1	1	0	0
24	B 156.7		0	1	1	0	1	0
25	A 162.2		0	1	1	0	0	0
26	B 167.9		0	1	0	1	1	0

#	EIA Specification Group Hz	Program Lines (ON...1, OFF...0)	1	2	3	4	5	6
27	A 173.8		0	1	0	1	0	0
28	B 179.9		0	1	0	0	1	0
29	A 186.2		0	1	0	0	0	0
30	B 192.8		0	0	1	1	1	0
31	A 203.5		0	0	1	1	0	0
32	B 210.7		0	0	1	0	1	0
33	A 218.1		0	0	1	0	0	0
34	B 225.7		0	0	0	1	1	0
35	A 233.6		0	0	0	1	0	0
36	B 241.8		0	0	0	0	1	0
37	A 250.3		0	0	0	0	0	0

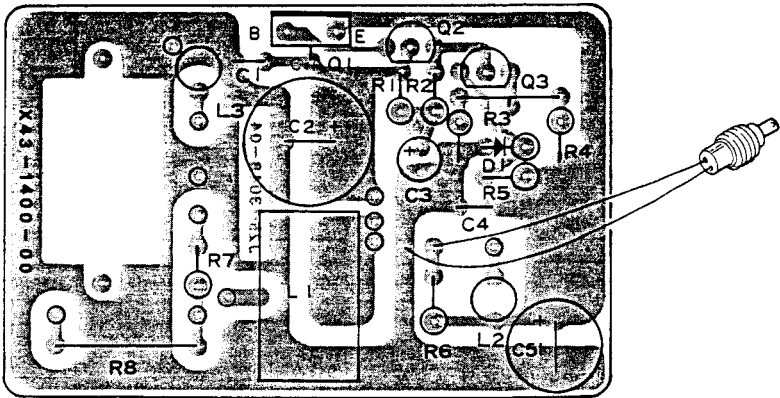
MS-1 (MOBILE STAND CHARGER)

MS-1 SPECIFICATIONS

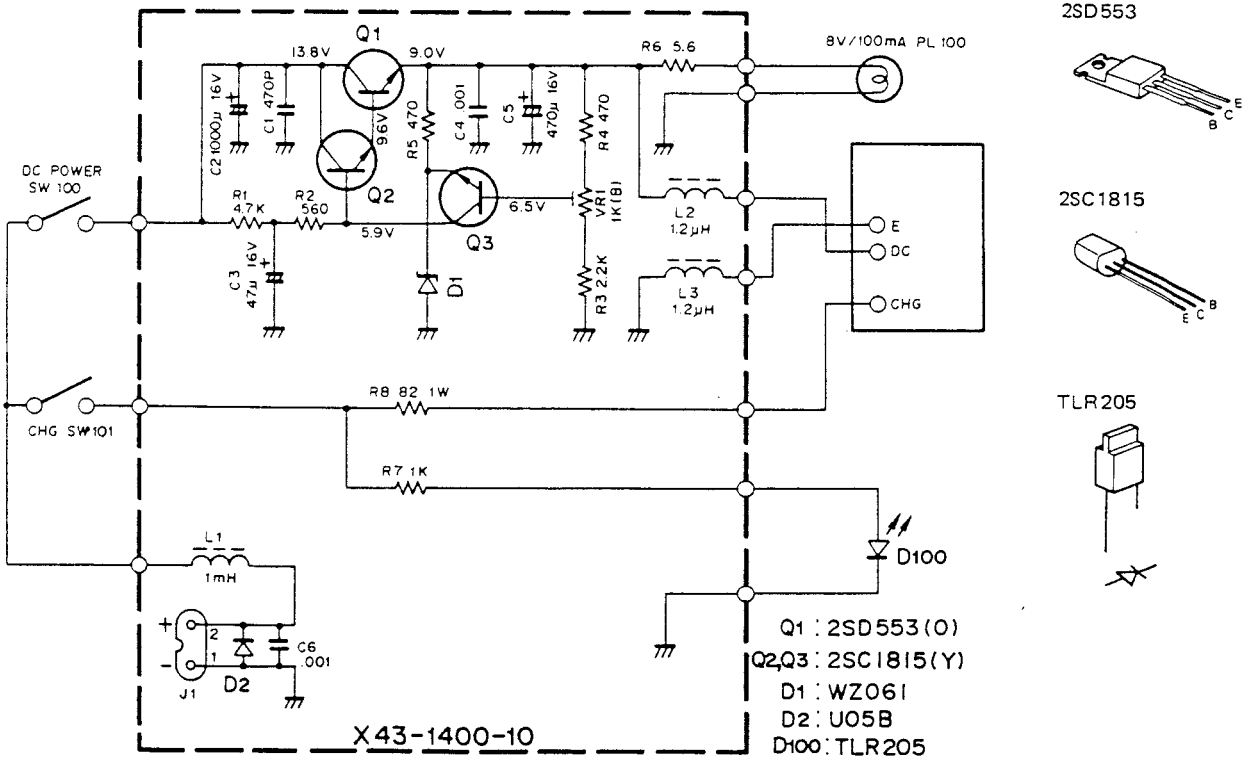
General
Dimensions 79(W) x 180(H) x 53(D) mm.
Weight 350g

Rating
Input source voltageDC13.8V±15%
Output voltageDC9.0V
Charging current About 45mA (DC 13.8V)
Charging time About 15 hrs.

MS-1 PC BOARD VIEW
(X43-1400-10) Component side view



MS-1 SCHEMATIC DIAGRAM



MS-1

MS-1 (MOBILE STAND CHARGER)

MS-1 PARTS LIST

Part No.	Re- marks	Description	Q'ty
MS-1, (KMT) GENERAL			
A02-0624-12		Mobile case (front)	
A02-0626-02	N	Mobile case (rear)	
A40-0607-04		Bottom case	
B10-0649-04	N	Front glass	
B11-0412-04	* N	Reflector	
B40-2590-04	N	Name plate	
B46-0007-00		Warranty card	
B50-3936-10	N	Operating manual	
E23-0426-05		Earth lug, LED	
E29-0429-04		Pin connector	3
E30-1696-05	N	Cigarette plug with cord	
G01-0815-04	N	Spring, switch	
G01-0816-04	N	Spring, connector	3
G10-0618-04	N	Protective cloth (A)	
G10-0619-14	N	Protective cloth (B)	2
G13-0626-04	*N	Neo sponge	
G13-0659-04	*N	Cushion (A)	
G13-0660-04	*N	Cushion (B)	
H01-2787-13	N	Carton case	M
H12-0489-13	N	Packing fixture	
H25-0029-04		Protective bag (Screw, tape)	
H25-0103-04		Protective bag (MS-1)	
J11-0406-14		Fixed stopper	
J12-0404-04		Pin (switch)	2
J19-1317-04		Diode holder	
J19-1359-04	N	Metal hook	
J61-0401-05		Nylon band	
J69-0304-04	N	Viscous tape	
N24-3015-45		E-ring	4
N30-2010-45		Panhead screw, Case	4
N35-3005-45		Bind screw, Hook metal fitting	4
N87-2005-46		Tap tight screw, Switch, LED	5
N89-3010-41		Tap tight screw, Fixed stopper	2
S36-1405-05		See saw switch, S100, S101	2
V11-3162-96		LED, TLR205, D100	
X43-1400-00		Power unit	

Part No.	Re- marks	Description	Ref. No.	Q'ty
POWER UNIT, X43-1400-00				
B30-0825-05	N	Lamp		
CE04W1C470M		E, 47 μ F, 16V	C3	
CK45B1H102K		C, 0.001 μ F	C4,6	2
C90-0820-05		E470 μ F, 16V	C5	
C90-0850-05	N	E, 1000 μ F, 16V	C2	
E08-0203-25		2P connector		
F20-0078-05		Insulating plate		
F29-0014-05		Insulating washer		
L15-0302-05	N	Troidal coil, 1mH	L1	
L34-0438-05		Choke coil, 1.2 μ H	L2,3	2
N10-2026-46		Hexagon nut		2
N10-2030-46		Hexagon nut		
N30-2604-46		Panhead screw		
N30-2610-41		Panhead screw		2
N30-3008-46		Panhead screw		
R12-1020-05		Trim. Pot, 1k Ω	VR1	
RS14AB3A820J		MF, 82 Ω , \pm 5%, 1W	R8	
2SC1815 (Y)		TR	Q2,3	2
2SD553 (O)		TR	Q1	
WZ-061		Zener diode	D1	
U05B		Diode	D2	

TR-2600A/E

SMC-30 (SPEAKER MICROPHONE)/ST-2 (BASE STAND)

SMC-30 OUTSIDE VIEW



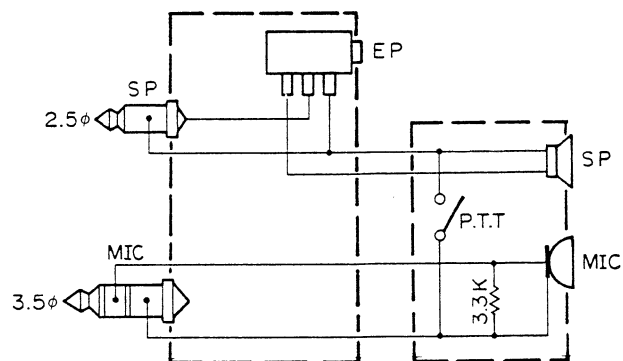
SMC-30 PARTS LIST

Part No.	Remarks	Description	Ref. No.
E30-1789-05	N	Curled cord ass'y	
J19-1360-08		Clip metal fitting	
J42-0429-08		Cord bushing	
K29-3035-08	N	PTT knob	
S50-1408-08		Micro switch	
T07-0219-08		Speaker	
T97-1024-08		Electret microphone	

SMC-30 SPECIFICATIONS

- **SPEAKER**
Speaker 40mmφ
Max. Input 0.5W
Input impedance 8Ω
- **MICROPHONE**
Type Electret condensor
Sensitivity -67dB
Output impedance 2kΩ
Frequency response ... 200Hz~5kHz
Operating temperature .. -20°C~+60°C
Dimensions 51W x 73H x 33D (mm)
(Projections excluded)
Weight 130g (Cord included)

SMC-30 SCHEMATIC DIAGRAM



ST-2 SPECIFICATIONS

Power Source Voltage

K TYPE	120V	60Hz
W TYPE	220V	50/60Hz
T TYPE	240V	50/60Hz
X TYPE	240V	50/60Hz
M TYPE	120/220V	50/60Hz

Dimensions 185 (W) x 72 (H) x 115 (D) mm

Weight 1.5 kg

DC Power Source Unit

Output Voltage 9.0V

Output current 0.8A

Charging Power Source Unit

Type Boosting charge type

Charging current..... Boosting charge about 600mA

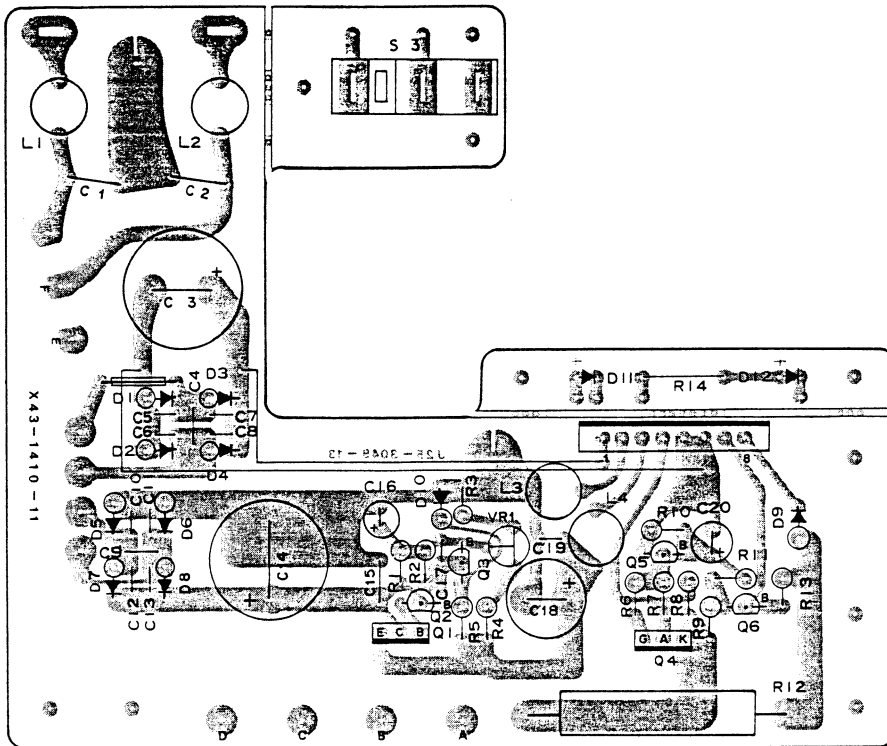
Trickle charge about 20mA

Charging time Boosting charge about 1 hr.

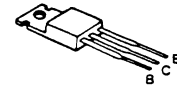
Trickle charge about 20 hrs.

ST-2 (BASE STAND)

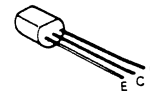
ST-2 PC BOARD VIEW



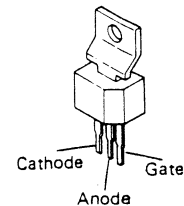
2SD553



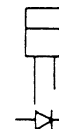
2SC1815
2SA1015(Y)



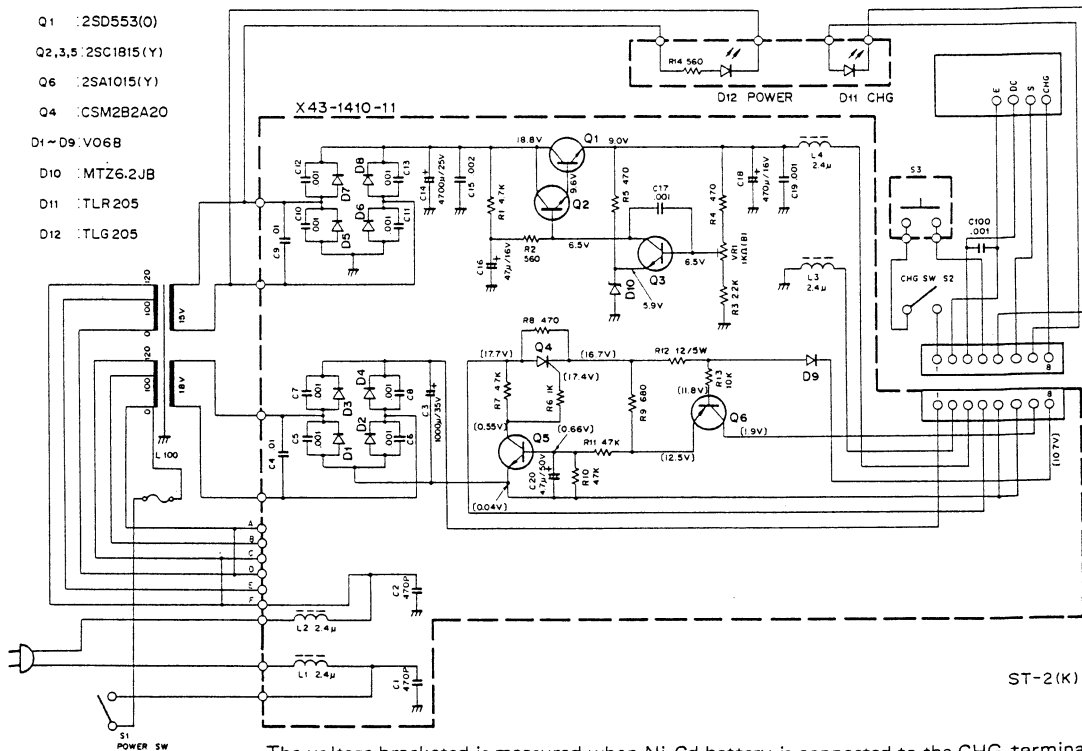
CSM2A1A20



TLR205



ST-2 SCHEMATIC DIAGRAM



The voltage bracketed is measured when Ni-Cd battery is connected to the CHG terminal.
Above schematic diagram shows K type.

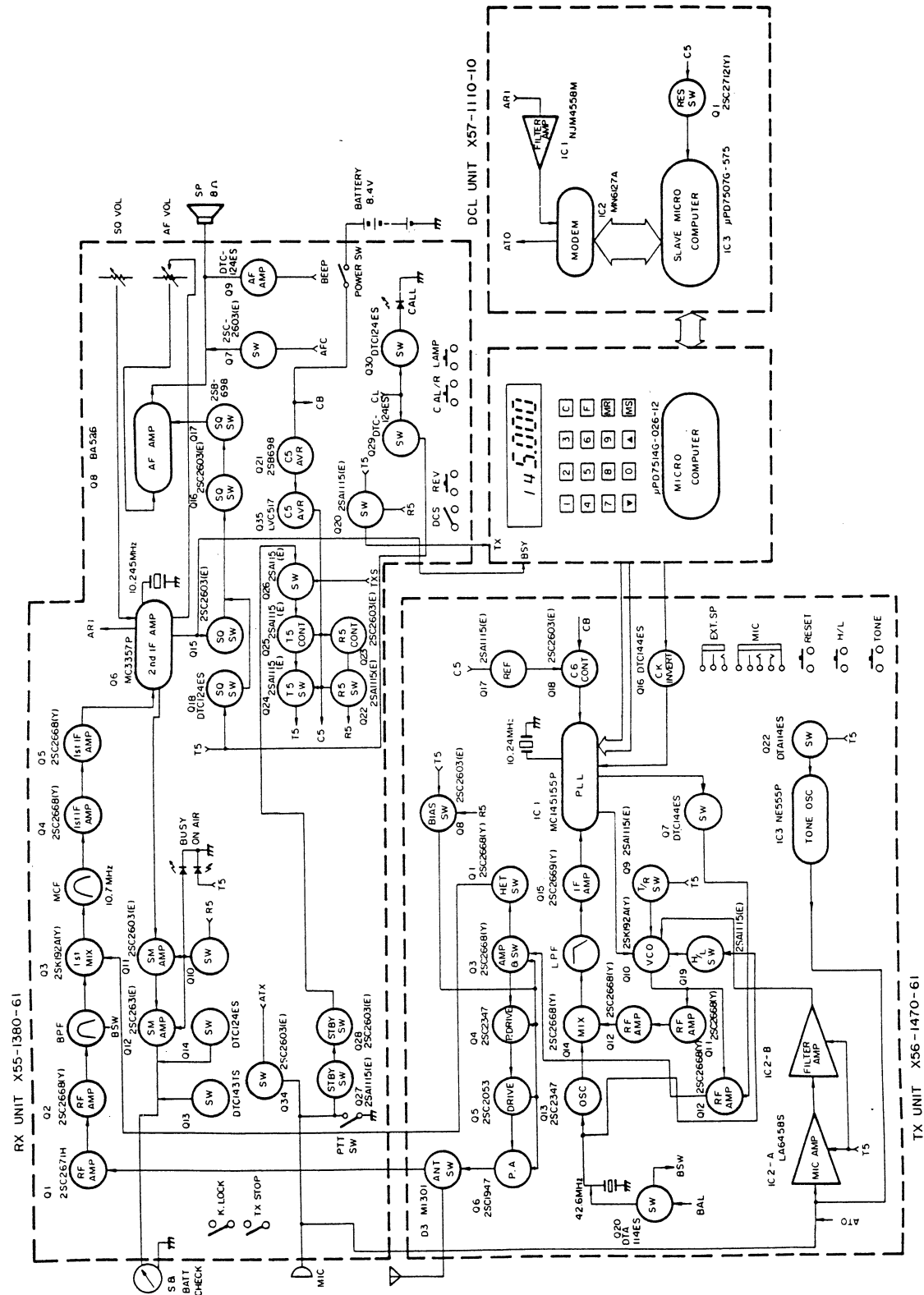
ST-2 (BASE STAND)

ST-2 PARTS LIST

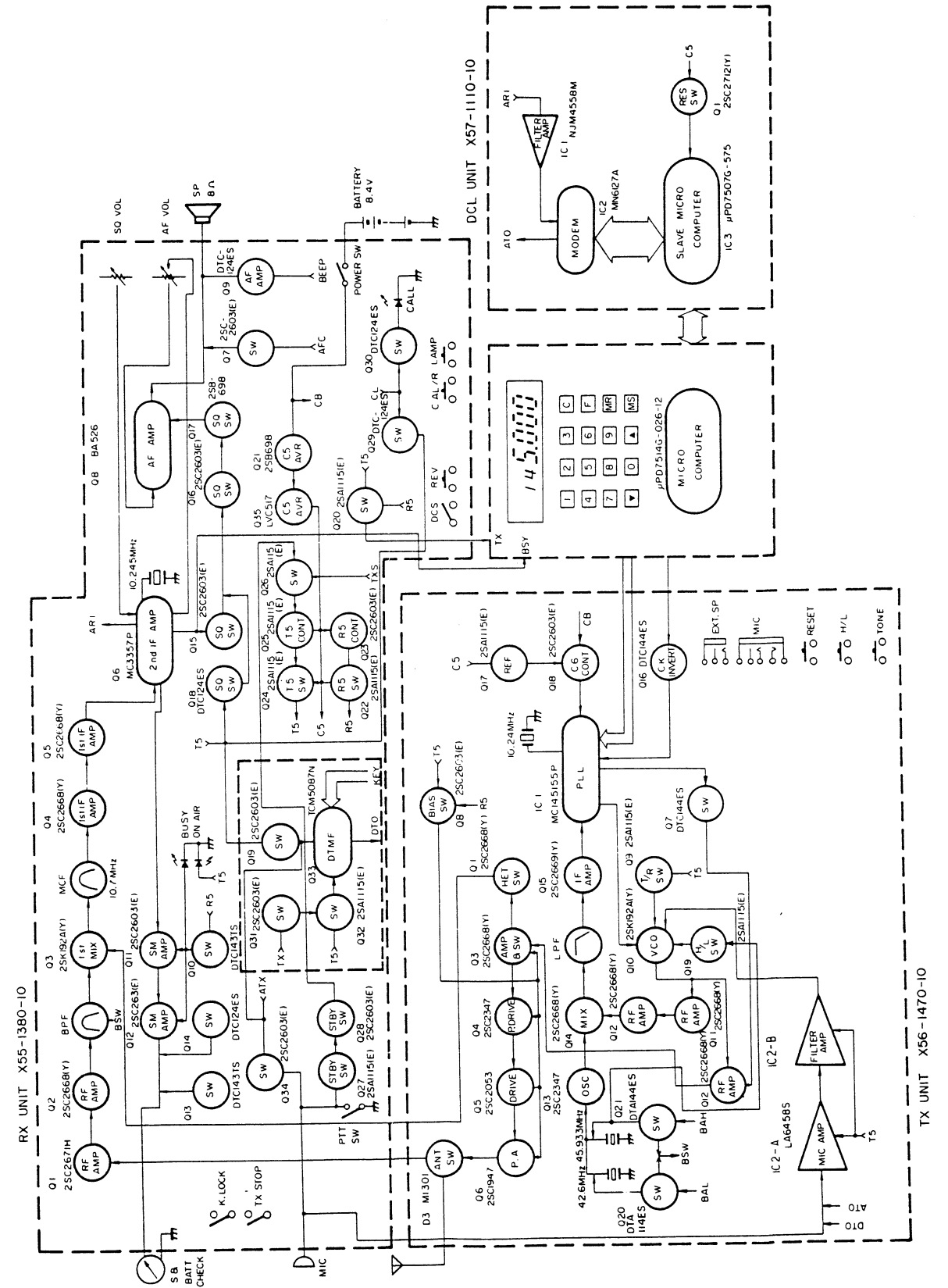
Part No.	Re- marks	Description	Q'ty
A02-0628-21	N	Case K,M,W,X	
A02-0629-21	N	Case T	
B40-2592-04	N	Name plate K	
B40-2593-04	N	Name plate W	
B40-2594-04	N	Name plate T,X	
B40-2596-04	N	Name plate M	
B42-1697-04		Voltage selector M	
B46-0411-00		Warranty card K	
B50-3938-20	N	Operating manual K,T,W,X	
B50-3947-20	N	Operating manual M	
D32-0075-04		Switch stopper, Slide switch M	
E29-0429-04	N	Pin, connector	
E30-0181-05		AC cord with plug K,M	
E30-0185-05		AC cord X	
E30-0585-05		AC cord with plug W	
E30-0602-05		AC cord with plug T	
G01-0815-04	N	Switch spring	
G01-0816-04	N	Spring connector terminal	4
G02-0533-04		Spring plate	2
G10-0620-14	N	Cushion cloth (A), Case	2
H01-2791-03	N	Carton case K,M,W,X	
H01-2792-03	N	Carton case T	
H12-0489-03	N	Packing fixture	
H25-0106-04		Protective bag	
J02-0070-05		Foot	4
J11-0406-14	N	Fixed stopper	2
J12-0404-04	N	Pin, switch	
J19-1317-04		Diode holder	2
J41-0024-15		Cord bushing T,W,X	
J42-0430-05	N	Cord bushing K,M	
J61-0401-05		Nylon belt	3
L01-8146-05	N	Power transformer	
N09-0256-05		Earth screw T,W,X	
N16-0040-41		Spring washer, Transformer	2
N24-3015-45		E-ring	5
N30-3004-41		Panhead screw, Slide switch M	2
N30-3006-41		Panhead screw, Power unit	5
N30-4006-41		Panhead screw, Transformer	2
N35-3006-45		Bind screw, Case	4
N87-2006-46		Tap tite screw LED, Micro Sw PC board	5
N87-3008-41		Tap tite screw Foot	4
N89-3010-41		Tap tite screw stopper	2
S31-2027-05		Slide switch, voltage selector M	
S36-1407-05	N	See saw switch, Power, charge S ₁ , S ₂	2
X43-1410-11	N	Power unit	

Part No.	Re- marks	Description	Ref. No.	Q'ty
Power Unit (X43-1410-11)				
CE04W1C470M		E. 47 μ F, 16V	C16	
CE04W1H4R7M		E. 4.7 μ F, 50V	C20	
CK45B1H102K		C. 0.001 μ F	C5,6,7,8,10,11, 12,13,17,19	10
CK45B2H471K		C. 470pF	C1,2	2
CK45F1H103Z		C. 0.01 μ F	C4,9	2
CK45F1H223Z		C. 0.022 μ F	C15	
C90-0814-05		E. 4700 μ F, 25V	C14	
C90-0820-05		E. 470 μ F, 16V	C18	
C90-0851-05	N	E. 1000 μ F, 35V	C3	
E23-0046-04		Square terminal		11
F20-0078-05		Insulating plate		2
F29-0014-05		Insulating washer		2
J13-0039-05		Fuse holder		2
L33-0624-05		Choke coil, 2.4 μ H	L1,2,3,4	4
N09-0641-05		Screw		2
N10-2030-46		Hexagon Nut		
N30-3008-46		Panhead screw		2
R12-1414-05		Trim, pot., 1k Ω	VR1	
R92-0661-05	N	Cement resistor, 12 Ω , 5W	R12	
R92-0150-05		Jumper resistor		
S50-1410-05	N	Micro switch	S3	
2SA1015 (Y)	N	TR	Q6	
2SC1815 (Y)		TR	Q2,3,5	3
2SD553 (O)	N	TR	Q1	
V06B		Diode	D1~9	9
MTZ6.2JB		Zener diode	D10	
CSM2A1A20	N	Thyristor	Q4	
TLG205		LED	D12	
TLR205		LED	D11	

BLOCK DIAGRAM (T,W TYPE)

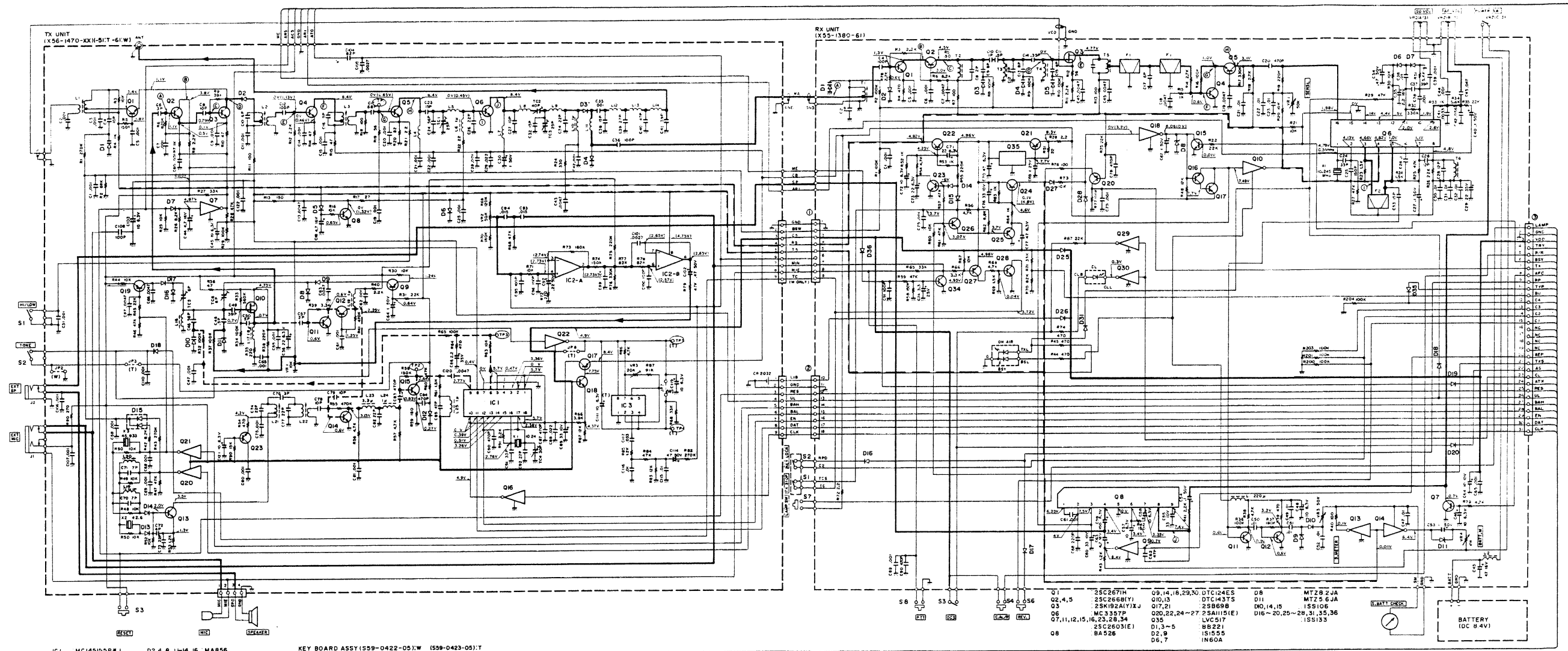


BLOCK DIAGRAM (K,M,X TYPE)



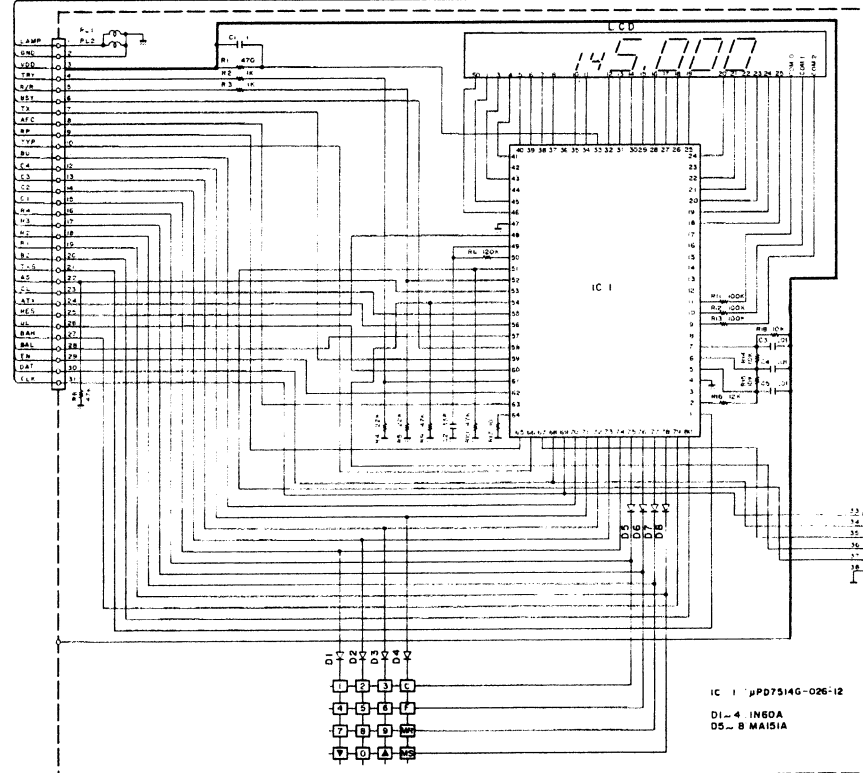
TR-2600A/E SCHEMATIC DIAGRAM (T,W)

Signal Line Control Line Common DC Line T5,R5 Line

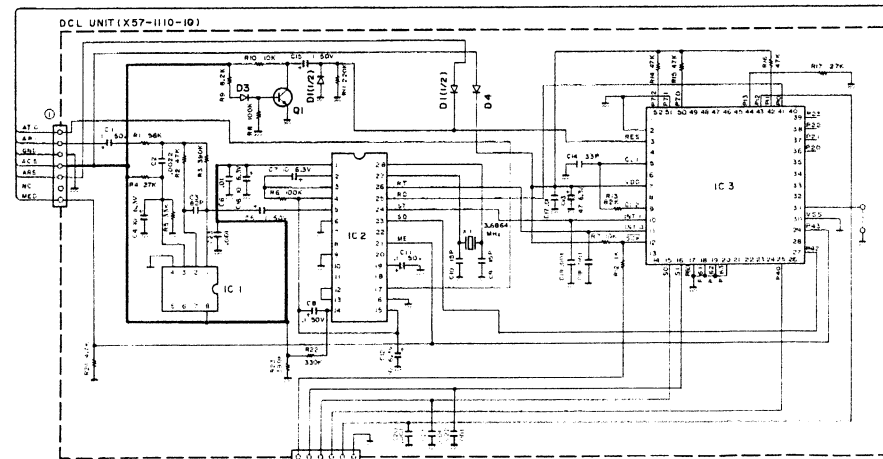


IC1 MC145105P#J
IC2 LA6458S
IC3 NE555P
Q1,2,3,11,12,14 2SC2668(Y)
Q4,13 2SC2053
Q5 2SC1947
Q6 DTC144ES
Q7,16 2SC2603(E)
Q8,18,23 2SA1115(E)
Q9,17,19 2SK192A(Y)
Q10 2SC2669(Y)
Q20,21 DTA144ES
Q22(W) DTA144ES

KEY BOARD ASSY (559-0422-05)W (559-0423-05)T



IC1 pD7514G-026-12
D1-4 IN60A
D5-8 MA15A



IC1 NJM4558M
IC2 MNG12TA
IC3 pD75076-575-00
Q1 2SC2712(Y)
D1,4 MA15WK
D3 MA522(G)

REFERENCE LEVEL
TRANSMITTER SECTION
f=145.000MHz
OUTPUT POWER 2.5W

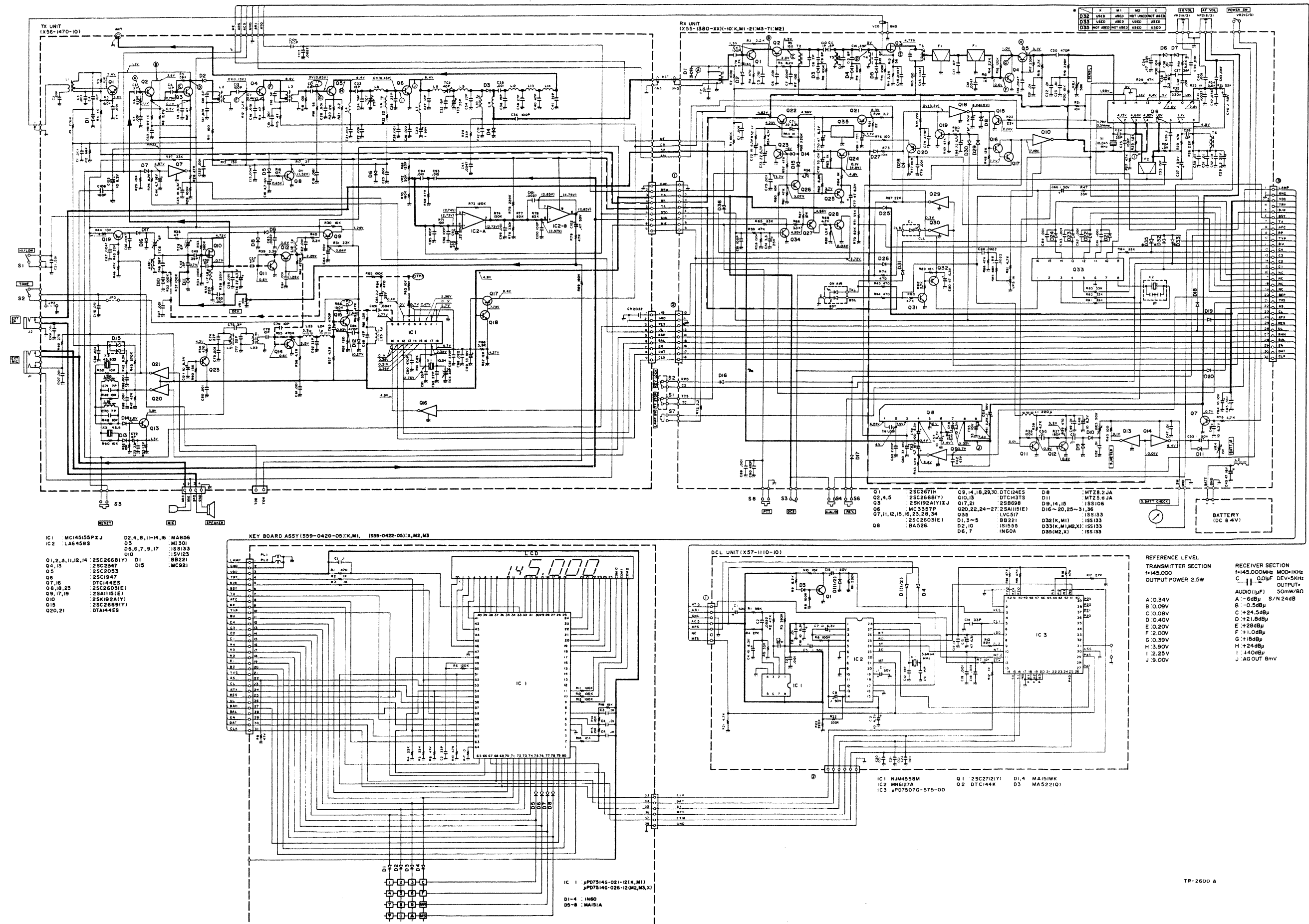
RECEIVER SECTION
f=145.000MHz MOD=1KHz
C 0.01uF DE=5KHz
OUTPUT=50mW/80
S/N2-4dB
AUDIO(1uF)
A -6dB
B -0.5dB
C +24.5dB
D +21.8dB
E +28dB
F +1.0dB
G +16dB
H +24dB
I +40dB
J AG OUT 8mV

1H-2600 E

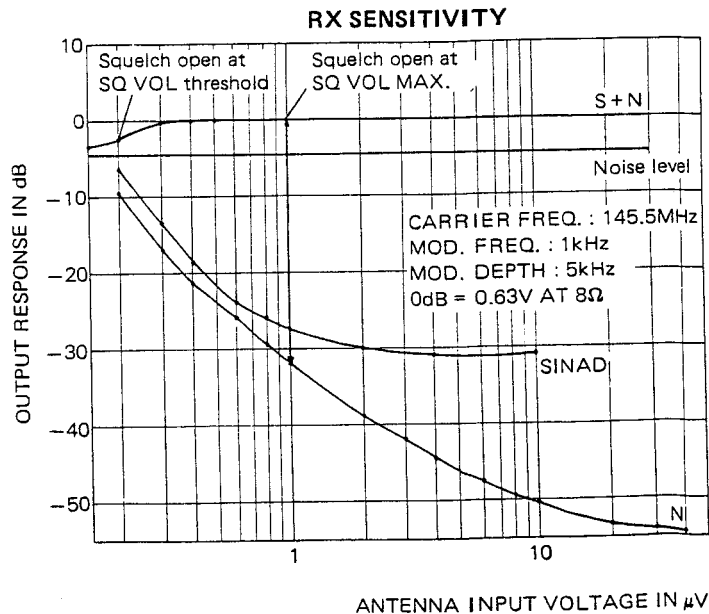
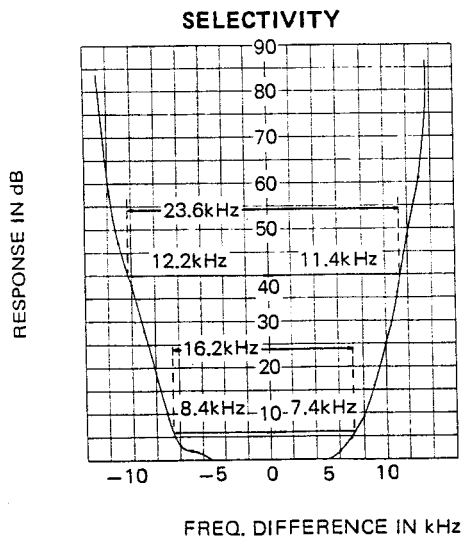
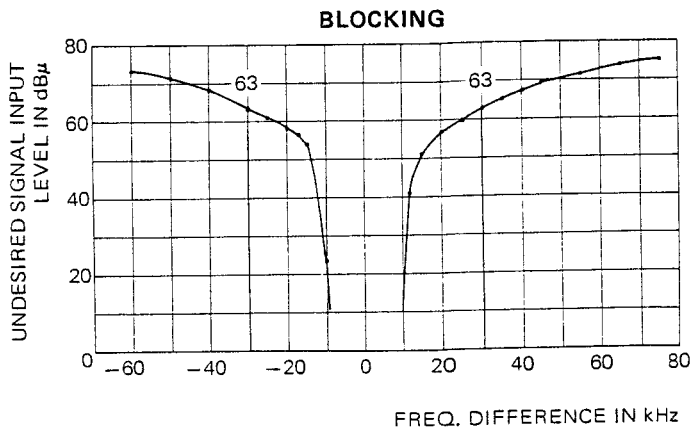
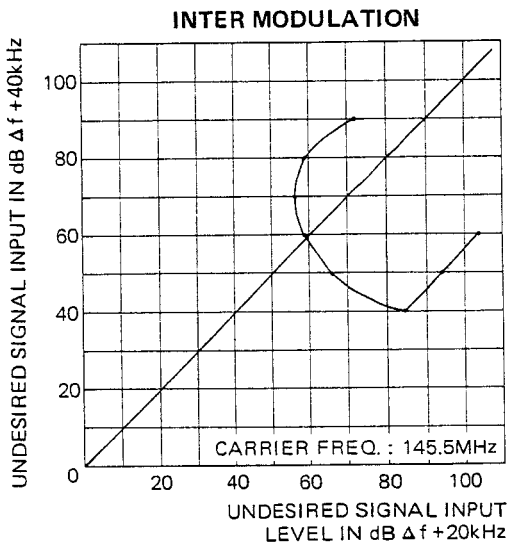
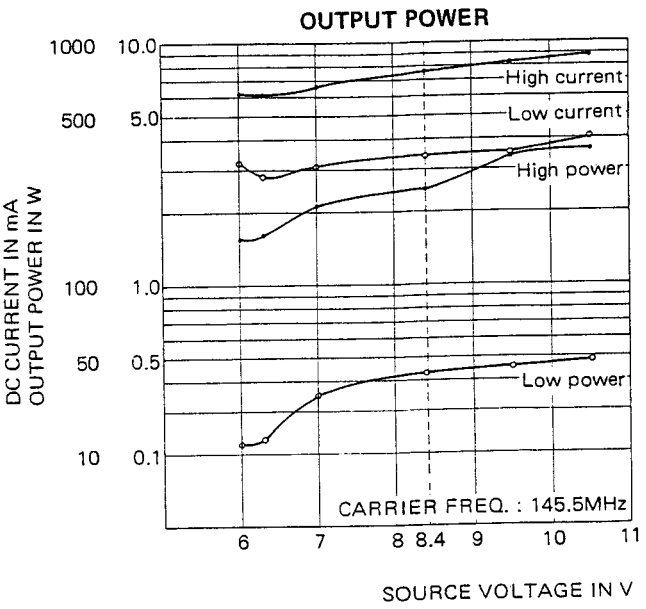
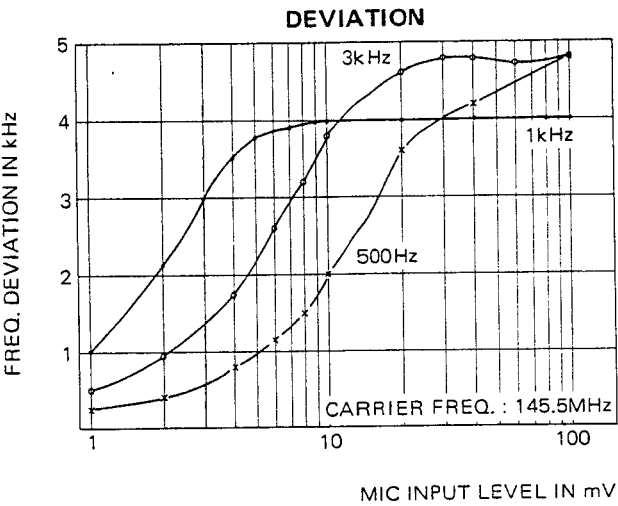
Voltage measurement conditions f=145.000MHz, RX no signal, () : TX.

Signal Line Control Line Common DC Line T5,R5 Line

SCHEMATIC DIAGRAM (K,M,X) TR-2600A/E



REFERENCE DATA



SPECIFICATIONS**[GENERAL]**

Frequency Range	144.000 ~ 147.995 MHz (K,M1,M2,M3) 144.000 ~ 145.995 MHz (T,W)
Memory Channels	10 CH
Mode	FM (F3), (F2 in DCS mode)
Operating voltage	8.4 V DC \pm 25%
Power Requirement	8.4 V, 450 mA (Ni-Cd battery pack) [Option T,W] 9 V manganese or alkaline (not Ni-Cd) 6 pcs. battery case [Option K,M1,M2,M3]
Back-up Power Requirement	CR-2032 Lithium battery
Current Drain	Approx. 35mA in receive mode with no input signal Less than 800mA in HI transmit mode (at 8.4 V) Less than 400 mA in Low transmit mode (at 8.4 V) Less than 1 μ A for memory back-up
Grounding	Negative
Operating Temperature	-20°C to +50°C
Antenna Impedance	50 Ω
Dimensions.....	With Ni-Cd battery: 66(2.6)W x 168(6.7)H x 40(1.6)D mm(inch) With manganese battery: 66(2.6)W x 176(7.0)H x 40(1.6)D mm(inch)
Weight	With Ni-Cd battery: 520 g (1.2 lbs.) With manganese battery: 510 g (1.2 lbs.)

[TRANSMITTER]

RF Output Power	HI = 2.5 W LOW = 0.3 W approx.
Modulation	Variable reactance direct shift
Frequency Tolerance	Less than $\pm 20 \times 10^{-6}$ (-10°C ~ +50°C)

Maximum Frequency

Deviation	± 5 kHz
Spurious Radiation	Less than -60 dB

[RECEIVER]

Circuitry	Double conversion superheterodyne
Intermediate Frequency	1st IF = 10.7 MHz 2nd IF = 455 kHz
Sensitivity	Better than 1 μ V for S/N 30 dB Less than 0.2 μ V for 12 dB SINAD
Pass-Band Width	More than 12 kHz (-6 dB)
Selectivity	Less than 24 kHz (-40 dB)
Spurious Response	Better than 50 dB
Squelch Sensitivity	Less than 0.25 μ V (threshold)
Audio Output Power	More than 400 mW (at 10% distortion and 8 Ω load)

NOTE: Circuit and ratings may change without notice due to advances in technology.

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